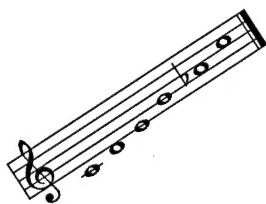
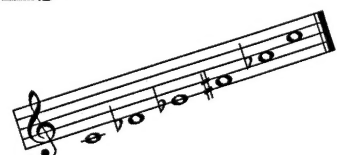
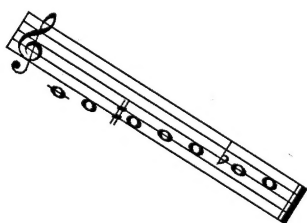


MUSICAL SCALES, ETHNIC & OTHERWISE

A SHORT-CUT TO IDENTIFYING AND USING SCALES,
BASED ON THEIR RELATIONSHIPS TO THE MAJOR SCALE

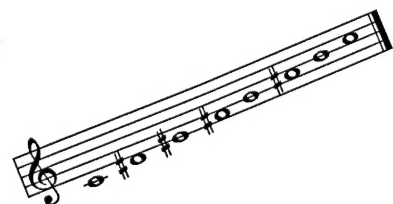
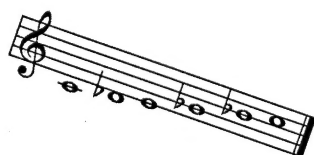
PLUS

VARIOUS INTERESTING ODDITIES



by

MARGARET J. CHAMBERLAIN



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BASED ON THEIR RELATIONSHIPS TO THE MAJOR SCALE**

PLUS

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DEDICATION

For his encouragement to let other work wait,
for his real interest in "my scales",
and for his financial backing,
this book is gratefully dedicated to
my husband of many years,

DAVID MORRIS CHAMBERLAIN

ACKNOWLEDGMENT

For my musical background,
for the idea of placing scales in their relationship to the Major Scale --
and for his saying, "You should publish this!",
I am indebted to

MR. JOHN (BUD) CONWAY
1918 - 1991

A SPECIAL THANKS

to my FAMILY
for their patience during the writing of this book;

to my son-in-law, BOB OSKINS,
and my friends,
DEAN HALLFORD, CHRIS MCCREARY, JACQUETTA VOGEL, AND MARY FALES,
for their help in buying and learning to use the computer for this book;

and especially to my son,
PAUL,
for his enthusiasm
and for his assistance in raising my "scale count"
from 163 scales to 198 scales.

DISCLAIMER

The author makes no claims of this being an infallible book. This was researched, compiled, charted, typed, re-typed onto a computer, and proof-read by only the author over a period of several years. The hope is that there are few errors, however, any that are found are entirely the author's own.

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SECTION A

THE WHAT'S, WHY'S, HOW'S, & HOWEVER'S

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CHAPTER 1

BACKGROUND INFORMATION NECESSARY FOR USE OF THIS BOOK

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WHAT IS A SCALE?

When opening a book about musical scales, one might well ask for a definition of the word "scale". This word, "scale", comes from the Latin word for "ladder", and this in itself is descriptive. A prosaic definition of a musical scale could be: "A series of tones ascending or descending according to a scheme of intervals." But this book was written mainly for the sheer enjoyment it gave to me, the author, and that definition doesn't sound like much fun! So let's look further.

There are two quotations from musical authorities that are more to my liking. They seem to set the proper tone for this book. One quotation is so good that I found it quoted in two different sources.* Groves Dictionary and Mr. Lloyd both inform us that Sir Hubert Parry, in The Art of Music, says "....Scales are made in the process of endeavoring to make music and continue to be altered and modified...." Doesn't his word "endeavoring" appeal to the imagination!

Another quotation that caught my fancy is also quoted in Mr. Lloyd's book on page 34 (see the second source in the footnote below). Mr. Lloyd quotes another knight, Sir Percy Buck, who said this in his Acoustics for Musicians, "....Music came first; then the scale accrued....then came the theorists to explain them."!

But I like to think of scales as the interesting, though comparatively insignificant, offspring of that magnificent, multifaceted mother, Music. You see, scales can have no meaningful life apart from melody -- tools without a workman. Scales are the chemical formula of composition, simply a way of codifying the music itself. Starting with a piece of music, a scale can be constructed; but start with a scale, and there is no hope of reconstructing that same piece of music.

Using scales to interpret music would be comparable to writing down "H₂O" and then trying to see the vast majesty of the Pacific Ocean. Nevertheless, the ocean *is* H₂O.

In the same way, well knowing that I am writing down "musical H₂O"; well knowing that though music may give us scales, a scale doesn't necessarily give us music; well aware of all this, I present this book of scales for, I hope, the enjoyment, and perhaps even the edification, of the reader.

*Quoted by: (1) Groves Dictionary of Music and Musicians, Fifth Edition; edited by Eric Blom, New York, St. Martin's Press Inc., 1954; and also by (2) Llewellyn S. Lloyd, Intervals, Scales, & Temperaments, St. Martins Press, 1979.

WHY A BOOK OF SCALES?

The PURPOSE of this book is:

1. To have a list of as many different "known" musical scales as I could locate in sources, all in one place where they can be easily seen.
2. To show which scales are used by particular ethnic groups.
3. To enable the identification of the scale in which a particular piece is written (Double Harmonic, Lydian, etc.)
4. To show the orderliness, the logical connections, and the natural progressions between different scales and between different tetrachords.
5. To assist in the choice of an authentic ethnic scale (Arabic, Portuguese, etc.) so that a piece of music may be composed or arranged in a way that will have the sound of the music of that particular ethnic group.
6. To help in the selection of a "different" scale for writing a composition.
7. To provide a list of scales for anyone aspiring to play instrumental solos -- since scale practice is considered by many experts to be the best way to learn or to improve solo playing.
8. To help in the selection of scales for use in improvisation.
9. To glorify the omnipotent God and Creator who so graciously gave us a world that is not confined to a monotone.
10. Just for the enjoyment of an interesting subject.

WHAT'S IN THIS BOOK? -- THE KEY TO UNDERSTANDING & USING IT

This is a book with a single thought -- musical scales. 198 of them. Most of these scales are ethnic scales, though some are synthetic scales. All of them were found in some sort of source material.

Every scale in this book is put into relationship to the Major scale and is shown with six (6) things (each will be explained farther on):

1. a NAME
2. a NUMBER
3. a STAFF with NOTES
4. the Scale INTERVALS involved
5. a SYMBOL (which shows how the scale differs from the Major Scale)
6. a Tetrachordal FORMULA

Many of the scales also have WHERE and BY WHOM USED. In addition, most of the scales have the SOURCE where they were found.

This book also has 103 CHARTS, since charts, in my opinion, make things so much easier to see and understand. Every chart in this book has some sort of explanation accompanying it.

Everything in this book is fully explained. There are definitions, indexes, cross references, and "sub-Tables of Contents" galore. This book is written for the proverbial man-on-the-street as well as for the advanced musician. Nothing should be "too hard" to find nor to use.

The "climax" of this book is THE GRAND FINALE (which starts on page 405), which has an individual staff with notes and *all* of the information that I have been able to collect -- for *each* scale, individually, found in this book.

NOTE: The Western Chromatic Scales are not really scales in the sense this book is talking about. However, "just for the record", they are included at the end of the "Numerical Order with Staff Chart" (Chart #11) and at the end of The Grand Finale as Scales #199 to #202.

AN EXPLANATION OF SCALE NUMBERING SYSTEM & TERM "SYMBOL"

Since all of the scales in this book are compared to the Major Scale, it is only sensible that the Major Scale should be #1. Now, since the Major Scale (#1) is a 7-Tone Scale, then it is only natural (at least to me) that the rest of the 7-Tone Scales in this book should immediately follow the Major Scale. After these 7-Tone Scales are numbered, then it is arbitrary which tone-group should come next. I decided to put the tone-groups in the order that seemed to me to be the closest to the 7-Tone Scales. Therefore, the tone-groups and the numbering of the scales is as follows:

#1 - #63	=	7-Tone Scales
#64 - #103	=	6-Tone Scales
#104 - #136	=	8-Tone Scales
#137 - #149	=	9-Tone Scales
#150 - #152	=	10-Tone Scales
#153 - #198	=	5-Tone Scales

Within each tone-group, there is a method to the numbering of those scales. It is like a filing system. They are numbered *numerically by their alterations from the Major Scale*. For instance, a scale that is like the Major Scale except for a lowered 2nd scale point and a lowered 7th scale point (Major 2- 7-), would come before a scale with a lowered 3rd scale point and a lowered 7th scale point (Major 3- 7-), because the numbers 2, 7 come before the numbers 3, 7 in any filing system. In the same way, Major 2- 6- 7- would come before Major 2- 7-, because the numbers 2, 6, 7, would come before numbers 2, 7 in a filing system. You will find that each tone group is a filing system within itself.

These scale point alterations plus the word "Major" I have chosen to call the SYMBOL of the Scale. (For instance, "Major 3- 7-" is the SYMBOL for the Dorian Scale, which is numbered #50.)

NOTE: This is strictly my own numbering system. The next man down the pike could well have an entirely different numbering system.

NOTE: The NUMBER can be used to look up any scale in The Grand Finale (pages 405 - 717) to find a summary of all of the information in this book about a particular scale.

NOTE: There may be several ways of writing Symbols for some of the scales. I have chosen one, and this is the one that appear in my chart. However, the other Symbols, which I call "Alternate Symbols" can be seen in Chart #13, starting on page 85 and in The Grand Finale.

**DEFINITIONS OF THE FOLLOWING WORDS ARE FOUND
IN THE GLOSSARY (WHICH STARTS ON PAGE 803)**

#1 - #198	---H---
½, 1, 1½, 2	
5-Tone Scale	Half-Step (½)
6-Tone Scale	
7-Tone Scale	---I---
8-Tone Scale	
9-Tone Scale	Interval
10-Tone Scale	Interval Combination
---A---	---J---
Above the Scale Octave	Jazz Scale
Alteration	
Altered	---K---
Alternate Name	
Alternate Symbols	Known Scale
Ascending or Ascending Scale	---L---
---B---	Lowered (-)
Backward	
Below the Octave	---M---
---C---	Modally
Church Mode	Modal Series (MS)
Combination Scale	Modal Series Scale Point Tone
Conjunct	Number (MS:SPT#)
Connecting Interval(s)	Mode
---D---	---N---
Descending or Descending Scale	Name
Descending-Inverted	Number (Scale Number) (#)
Diatonic Modes (Scales)	Numerical Alteration
Disjunct	Numerical Scale Order
---E---	---O---
Ecclesiastical Mode	Octave
Ethnic Group	Omitted Tone
Ethnic Scale	---P---
---F---	Pentatonic (Pent.)
Formula	

Words Found in Glossary (cont'd)

---R---

Raised (+)
Reference
Retrograde-Inversion (Ret-inv)

---S---

Scale
Scale Number
Scale Octave
Scale Point Tone
Scale Point Alteration
Scale Intervals
Scale Spelling
Source
Spelling
Staff
Step
Symbol

---T---

Tone
Tone Group
Tetrachord (Tet)
Tetrachord Sign
Tetrachordal Formula (Formula)
Trichord
Trichord Sign

---W---

Whole Step

CHAPTER 2

COUNTERS TO EXPECTED CRITICISMS OF THIS BOOK

CONTENTS OF CHAPTER 2:

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There are many criticisms that may well be made of this book. There *is* a basis for these criticisms -- however, when the following imaginary reader-author dialogue has been read along with the purpose of this book on page 6 ("Why a Book of Scales?"), most of these criticisms should be satisfactorily answered.

Criticism 1: This book is an over-simplification of the complex subject of musical scales.

Counter: Perhaps true -- however, this book originally was meant to be simply as complete a list of scales as I could gather -- nothing more. I had wanted to see such a list myself and had not been able to find one. Therefore, I had decided to compile a list for myself. The fact that this book is more than simply that list is because, once started, like Topsy, it "just grewed".

Criticism 2: At times there seems to be a rather casual approach to the subject of scales in this book.

Counter: True -- however, this is not meant to be an ultra-serious, learned thesis on all the why's and wherefore's of scales. I very willingly leave that to others who are more qualified than I. I have been as thorough and as orderly as I could be in making up these lists and charts, but if you want a "scholarly approach", you must look elsewhere.

Criticism 3: There are other scales that are not included in this book.

Counter: That has to be (regretfully) true -- however, I make no claims of this being a complete list of all musical scales that "exist" -- only as complete a list of all of the musical scales as I was able to locate in source materials. Through deduction, logic, and just the sounds of them I am sure that many more scales "exist" if only I could "find" them. In fact, to support your criticism, I read that a good musician in Japan should have known about 100 5-Tone Scales, and this book has only the 46 5-Tone Scales that I was able to verify.

Criticism 4: Where did these scales come from -- some of them look suspiciously unusual.

Counter: True -- however, I found all but four of these scales in other books. The remaining four scales were given to me by Mr. Bud Conway who had himself "made up" and used two of the scales and had come across the other two scales while analyzing pieces of music. I made up *none* of them.

Criticism 5: I noticed that in *The Grand Finale* (starting on page 405) and in the Scale Source Index (page 791) that most of the scales in this book have references with the source material and the page number where you found them. But some of the scales don't have references and page numbers. Why not?

Counter: True, 14.2% of the scales have no source reference. --However, considering that it had never occurred to me to put down which particular book and which page number in that book for each scale as I found it (though I faithfully kept a bibliography), I think an 85.8% referenced number of scales is good! I had been working on this book off and on for 9 years and had it in what I considered the almost-final form, when a friend in the music department at the San Diego State University here told me that I should have a source book and page number for each scale! Talk about a shock! So I took my carefully kept bibliography and went back and tried to re-locate all of the scales so that each could have a specific reference book and page number. But many of the scales that I couldn't relocate had just been mentioned in passing in one of the books -- or in one of the ten volumes of *Groves Dictionary*, or one of the many volumes of the *New Groves Dictionary*, etc., etc.! Then I noticed that the books in my bibliography didn't have a reference with any of *their* scales! So, after 3 months of hunting I finally decided to quit driving myself crazy trying to relocate every last one of my 198 scales. You'll just have to be satisfied with 85.8% And if that bothers you, just disregard the 14.2% that are reference-less -- and you'll still have 169 different scales with references -- more than you are likely to find in any other book!

Criticism 6: How about the names of the scales? Some of the names are rather strange sounding -- I've never heard of them before. Are they real names, or did you just make them up?

Counter: All of the names of scales in this book *except 21 names* are names that I found in reference material, or, if no specific name could be found, the name of the country where the scale was used was applied as a name, or, occasionally, the name of the person who "made up" the scale and used the scale was applied as a scale name. Now for the 21 exceptions. These I did make up in order to avoid confusion. There were 5 different 6-Tone Scales with only the name of "Scotch". And there were 10 different 6-Tone Scales with only the name of "Appalachian" (or "Anglo-American"). And there were 13 different 8-Tone Scales and six different 9-Tone Scales with only the name of "Hindu", making a total of 15 scales with only the name of "Hindu". This was confusing, and I felt something had to be done. So I took the liberty of making up some logical names for 3 of the Scotch scales, 5 of the Appalachian scales, and 13 of the Hindu scales. All 21 names that I made up were approved by Mr.

Bud Conway before they were used in this book. For a list of the scales whose names I did make up, see page 128.

Criticism 7: Why have you given such strange sounding names, such as "Isfahan" and "Zangula", to some of the Arabic Scales?

Counter: You are correct that these names are strange sounding to the Western ear -- however, I figured that it would be easier to distinguish between the Arabic scales if the specific names that I found for them were used rather than have 14 scales named "Arabic" and trying to remember which was which. This is also true of the Japanese scales.

Criticism 8: You have attached names to some of the Arabic scales that I have seen attached to somewhat different scales.

Counter: True. In fact, I found the names attached to these scales *and* slightly different scales also, sometimes even in the same book. --However, since the original Arabic scales had quarter-tones, the authors of my source materials (and your source material, as well) were trying to give the scales as closely as possible for the Western reader, and they had to decide whether a particular tone that was part way between G and G \flat , for instance, would be closer if listed as a G or as a G \flat . Obviously, the authors differed in their opinions. I found these names listed in more than one book and tried to choose the one name that seemed to be the most commonly used for a particular scale.

Criticism 9. Many scales involve quarter tones, therefore, many of the scales in this book are not completely accurate.

Counter: True -- however, the scales in this book have been arranged so that they may all be used on the piano. Therefore, they are of necessity only close approximations. For complete accuracy, the Cent system, as used by Alexander Ellis, would have to be used. And no piano could use that. (Also see Criticism #8, just above.)

Criticism 10: You mention on page 5, "Why a Book of Scales?", that the scales in this book would allow one to arrange or compose a piece that would sound truly ethnic. But more is needed to make ethnic music (or any music) than just a scale.

Counter: Very true -- however, this is a book *only* of scales. The rhythm, harmony, and special characteristics of ethnic music must be looked up elsewhere.

Criticism 11: Many ethnic scales don't start on Middle C as do all of the scales in this book.

Counter: True -- however, for the sake of simplicity in grasping the idea of the scale and to be able to "see" the scale quickly, all of the scales in this book are based on Middle C. But, starting on page 757 there are 180 scales (those that aren't combination scales nor more than an octave) listed in 12 keys each.

Criticism 12: Some ethnic scales don't stay in a strict scale as they are here. Instead, they change if they go above or below the octave of the scale.

Counter: True. In many ethnic songs (especially the older ones), if the song goes above or below the "scale octave", the notes below the octave or the notes above the octave will be altered from the corresponding notes within the scale octave. For example, the 7th note of the scale might be flatted, whereas the same note below the scale octave might be a natural (a leading tone). (Also, often older ethnic music was composed simply of consecutive tetrachords, not of scales within an octave as we know them. I have included three 10-tone scales that show this.) The only examples of scales that changed above or below the octave that appear in this book can be found together on page 127.

Criticism 13: Often ethnic music doesn't stay within the strict scale as you give them.

Counter: Very true -- however, these scales are to give you, often, an idea of the general form. There are "accidentals" in all music. Also, some scales seem to fluctuate between the use of two notes. For example, sometimes the piece might use E and sometimes E \flat ; they seem to be used interchangeably, but not consecutively. I call these "Combination Scales" and use brackets to indicate the interchangeable notes, such as [3-/ 3] or [3-, 3]. These can be found on Chart #18 on page 124.

Criticism 14: Some ethnic scales are consistently different in the notes used as they ascend and the notes used as they descend the scale.

Counter: Again, very true. In fact, Alain Danielou, in his Northern Indian Music, lists almost every scale differently ascending and descending. Often he would show an interval as a half-step ascending and as a whole step descending. Sometimes he would have a 5-tone scale ascending and a similar 6-tone descending. --However, I decided that this book wasn't the place to list them

all. So I included one from his book and then listed a few others that I had found elsewhere. These are shown on Chart #19 on page 125.

Criticism 15: Some of these scales are used in other countries or by other composers than just those listed in this book.

Counter: True -- however, I have listed all of the countries that I was able to locate in a source book that used a particular scale. As for composers, I only listed those that I found had used an unusual scale, just to show that such a scale actually was used in our culture (although, sometimes the scale would be used just in a short section of the composition, not the whole piece).

Criticism 16: Many very old or primitive ethnic scales are confined to just three, or four, or maybe five consecutive notes (for example, D, E, F as a "scale" or C, D \flat , D, E, F). There are none in this book.

Counter: True -- however, such limited scales are not scales in the sense that this book is covering scales. This book contains only scales that can have a range of at least an octave.

Criticism 17: But there are some 4-tone scales that do "skip" notes and cover an octave.

Counter: True. In fact, I found several, and my son wanted me to include them -- however, I decided to confine my book to 5-Tone to 9-Tone Scales with a few 10-Tone Scales thrown in on the side.

Criticism 18: What about the Western Chromatic Scales?

Counter: The Chromatic Harmonic and the Chromatic Melodic scales (the "Western Chromatic" Scales) are not scales in the sense that this book is talking about scales. After all, they are each just 12 consecutive half steps, the only differences being whether a note is a sharp or a flat. --However, out of consideration for those who are interested in them (I'm not) and to be thorough, these are numbered as Scales #199 to #202 and are included on page 68 at the end of Chart #11, "Scales with Notes on a Staff", and at the end of The Grand Finale on page 715.

Criticism 19: This book can't even count straight. The scales start numbering at #1 with the 7-Tone Scales, then they go to the 6-Tone, 8-Tone, 9-Tone and 10-Tone Scales, and the last numbered are the 5-Tone Scales.

Counter: True -- however, remember that the numbering system of this entire book is based on the Major Scale and in what way other scales differ from the Major Scale. Therefore, the Major Scale is #1 with the other 7-Tone Scales following it. The other tone groups follow the 7-Tone group, from those tone groups most like 7-Tone Scales to those tone groups least like 7-Tone Scales. In my opinion (and *this is entirely arbitrary*), the 5-Tone Scales are the least like the 7-Tone Scales, so I put them last. However, it is only where the scales appear numerically, #1 - #198, that the tone groups are in that order: 7-Tone, 6-, 8-, 9-, 10-, and 5-Tone Scales. In the other places where the consecutive numbers, #1 - #198, don't matter, then I have put them starting with 5-Tone Scales, then following in order of size: 5-Tone, 6-, 7-, 8-, 9-, and 10-Tone Scales. But always the groups are labeled, so there really shouldn't be any confusion.

Criticism 20: Some of the scales are "spelled" incorrectly (such as using "2+", which would be "D#", rather than using "3-", which would be "Eb".

Counter: True -- however, these are purposely "misspelled" so that a scale may be seen more easily and can be constructed by simply shifting the fingers on a piano keyboard from the C Major Scale. The scales that I know are misspelled are given with their correct spelling in The Grand Finale. They are also listed all together in Chart #16, "Correct Spelling", on page 123. However, some scales are spelled one way by one person and are spelled another way by another person. So, some spelling is arbitrary. Also, remember that most ethnic scales were sung or played for generations before they were ever written down with specific notes.

Criticism 21: Why are all of those Modal Series, Retrograde-Inverted Scales, etc. included in a book of scales? Isn't that just a lot of excess verbiage?

Counter: Perhaps true -- however, as I have said elsewhere, though this did start out just as a list of scales, one thing led to another.....and, well, what can I say?! (This is known as a very weak counter!) Actually, I enjoyed all of the different facets of the scales so much as I came upon them, that I hoped someone else might want to share in the adventure. If such things aren't your cup of tea, just skip them.

Criticism 22: Your Modal Series (starting on page 265) are full of gaps. Why didn't you just go ahead and put scale names for all of the intervals? I'm sure it could be done.

Counter: True, this *could* have been done. In fact, Vincent Persichetti in his book, Twentieth Century Harmony, says on page 44, that "...the modal construction principle may be applied to any scale, constructing multiple versions." -- However, since my book is by definition a book of "known" scales, then *only* such scales as I actually found in some source material as being used are "plugged into" a Modal Series as a scale. If, starting on page 265, you find a Modal Series completely filled in, then you may be confident of one of two things: (1) The scales were all found in some source material(s) (often one at a time in separate sources), or (2) the source material clearly stated that all of the steps of that particular Modal Series were scales. As tempting as it was, I "filled in" *no* Modal Series on my own.

Criticism 23: Why were all those symbols for tetrachords used? Also, some tetrachords already have names.

Counter: Perhaps true -- however, the only names for tetrachords that I have seen were for the tetrachords which I call "Major", "minor", and "Natural minor" (designated as "M", "m", and "mN"). These were in one source called "Lydian", "Phrygian", and "Dorian" tetrachords, respectively. But since those were not used in most of the books, I decided just to keep my own symbols and otherwise use numerical and alphabetical symbols which would be easiest to see and use. (See page 25 for my Tetrachord symbols and their explanations.)

Criticism 24: There seem to be repetitions of explanations and definitions and superfluous cross-references.

Counter: Very true -- however, this is purposely done to keep down the confusion. Better a repeated definition or an extra cross-reference than a completely lost or overwhelmed reader.

Criticism 25: Actually, you (the author) have the whole idea of scales all wrong! Don't you know that a scale is just any arrangement of intervals that a musician cares to play? A scale doesn't even have to be "official"! So why all the fuss with this book in the first place?

Counter: True! I agree with you! Especially in these days when so many of the jazz and rock musicians are "turning loose" and experimenting with different sounds and combinations of sounds. You can read articles in guitar magazines about "just try moving a note half a step up or down and then see how a scale sounds". Doing that would, from my book's point of view, make

a new scale. I really believe that we are on the edge of a great break-through in musical knowledge and techniques with some of these young, adventurous musicians. -- However! The whole idea of this book is just to have a list all in one spot of as many *known* scales as I could find that have been used and are found in reference material. My purpose is *not* to stop the questing musician; it is to give him a spring-board. I'm the first to admit that a scale doesn't have to be a fixed, immovable set of intervals. But there are certain already used sets of intervals that *are* known. So why not have a list of them, especially the ethnic scales. And, then, certainly, go ahead and experiment with them on your own. My guitar-playing son showed me a magazine article that told of experimenting with intervals. The author of the article showed an experimental set of intervals that he had been working with and showed how he had "cycled" the intervals and what he had come up with. I looked at his Modal Series; then I wrote down the intervals. Guess what? He had, by experimenting, come up with my Japanese Pentatonic Modal Series (Scales #165, 168, 171, 188, and 195 in this book). Now, don't you think that author would be interested in knowing that these scales had already been "found" and used? That would just reinforce his own ideas about experimenting with intervals. Along that line of reasoning, remember that originally I had been interested in Ethnic Scales -- still my main interest. But many of my "synthetic" scales have turned out to be ethnic scales also. See Chart #43 on page 195 for a list of strictly (as far as I know) synthetic scales.

Criticism 26: This book and these charts are just too complicated to be easily understood, anyway.

Counter: FALSE! This book has purposely been put together so that even a person with very little musical background could understand most of it and could definitely use it for scale identification *if* he would take the time to read the pages with the definitions and explanations that tell how to use this book. In fact, most of the book is put together so that if you will just read the explanation at the beginning of the section or chapter that you are interested in, you should be able to understand it. However, if you don't wish to bother with that, you can just turn to page 46 and find a complete list of all of the scales in this book with hardly more than the Scale Name and a Staff with the notes of that particular scale in the key of C on it. But for those of you who have a greater interest in detail, other sections of the book will be of interest. REMEMBER, *everything* in this book (except Chart #101 starting on page 757, which shows the scales in 12 keys, which I didn't want to do but which my son insisted should be included), everything started out as an interesting curiosity that I explored for my own pleasure and then decided to share with anyone with similar interests.

CHAPTER 3

TETRACHORDS

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AN EXPLANATION OF TETRACHORDS & TRICHORDS, ALSO "FORMULA"

Scales are made up of Tetrachords in combination with other Tetrachords, Connecting Intervals, or Trichords. A tetrachord is four consecutive notes ("tetra" means "four") with the intervals between them (in order). In this book the Scales are shown in two ways:

1. By changes from the Major Scale (making a Symbol)
2. By the intervals between the notes of a scale, applying Tetrachordal Signs to the tetrachords (and thereby making a Formula)

The following charts list all of the tetrachords and trichords involving $\frac{1}{2}$, 1, $1\frac{1}{2}$, and 2 steps in most possible combinations and the signs that have been assigned to each. All of the scales in this book with their Tetrachordal Formulas (Formula) are shown "at a glance" in "All Scales by 1st Tetrachord, Tone Groups Mixed (by FORMULA)" (Chart #15, starting on page 113). Most of the Tetrachordal Signs were made up by me. However, in some books I found tetrachords with the names "Major", "minor", and "Natural minor" (which are designated here as "M", "m", and "mN"). But other book called these same tetrachords "Lydian", "Phrygian", and "Dorian" tetrachords respectively. So I felt free to use the names or signs that I wanted. Some of them are obviously from certain scales. The others are just numbered or lettered. (See the explanation for the Tetrachordal Signs in Chart #3, page 25).

A Formula (short for "Tetrachordal Formula") is what I have named the particular combination of tetrachords (or tetrachord and trichord) that make up a scale. Each scale has its own distinctive, unchanging Formula. Because the intervals of a particular scale never change, the Formula for that scale *never* changes.

**TETRACHORD SIGNS
CHART #1**

For Tetrachords with Scale Point Interval Combinations Involving $\frac{1}{2}$, 1, & $1\frac{1}{2}$ Steps					For Tetrachords With Scale Point Interval Combinations Involving $\frac{1}{2}$, 1, &/or $1\frac{1}{2}$ Steps Combined with 2 Steps				
Sign	Interval Combin.			*Times Found	**Sign	Interval Combin.			*Times Found
(1) -	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	-- 11	(a) -	$\frac{1}{2}$	$\frac{1}{2}$	2	-- 1
(2) -	$\frac{1}{2}$	$\frac{1}{2}$	1	-- 13	(b) -	$\frac{1}{2}$	1	2	-- 1
(3) -	$\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	-- 5	(c) -	$\frac{1}{2}$	$1\frac{1}{2}$	2	-- -
Dim -	$\frac{1}{2}$	1	$\frac{1}{2}$	-- 20	(d) -	$\frac{1}{2}$	2	$\frac{1}{2}$	-- 4
mN -	$\frac{1}{2}$	1	1	-- 32	(e) -	$\frac{1}{2}$	2	1	-- 4
(4) -	$\frac{1}{2}$	1	$1\frac{1}{2}$	-- 6	(f) -	$\frac{1}{2}$	2	$1\frac{1}{2}$	-- -
mH -	$\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	-- 23	(g) -	$\frac{1}{2}$	2	2	-- -
(5) -	$\frac{1}{2}$	$1\frac{1}{2}$	1	-- 12	(h) -	1	$\frac{1}{2}$	2	-- 7
(6) -	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	-- 3	(i) -	1	1	2	-- -
(7) -	1	$\frac{1}{2}$	$\frac{1}{2}$	-- 17	(j) -	1	$1\frac{1}{2}$	2	-- -
m -	1	$\frac{1}{2}$	1	-- 39	(k) -	1	2	$\frac{1}{2}$	-- 3
(8) -	1	$\frac{1}{2}$	$1\frac{1}{2}$	-- 4	(n) -	1	2	1	-- -
M -	1	1	$\frac{1}{2}$	-- 33	(o) -	1	2	$1\frac{1}{2}$	-- -
W -	1	1	1	-- 20	(p) -	$1\frac{1}{2}$	$\frac{1}{2}$	2	-- 1
(9) -	1	1	$1\frac{1}{2}$	-- 9	(q) -	$1\frac{1}{2}$	1	2	-- 1
(10) -	1	$1\frac{1}{2}$	$\frac{1}{2}$	-- 3	(r) -	$1\frac{1}{2}$	2	$\frac{1}{2}$	-- -
(11) -	1	$1\frac{1}{2}$	1	-- 10	(s) -	$1\frac{1}{2}$	2	1	-- -
(12) -	1	$1\frac{1}{2}$	$1\frac{1}{2}$	-- -	(t) -	2	$\frac{1}{2}$	$\frac{1}{2}$	-- -
(13) -	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	-- 5	(u) -	2	$\frac{1}{2}$	1	-- 4
(14) -	$1\frac{1}{2}$	$\frac{1}{2}$	1	-- 9	(v) -	2	$\frac{1}{2}$	$1\frac{1}{2}$	-- -
Aug -	$1\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	-- 3	(y) -	2	$\frac{1}{2}$	2	-- 2
(15) -	$1\frac{1}{2}$	1	$\frac{1}{2}$	-- 5	(z) -	2	1	$\frac{1}{2}$	-- 1
(16) -	$1\frac{1}{2}$	1	1	-- 7	(aa) -	2	1	1	-- 1
(17) -	$1\frac{1}{2}$	1	$1\frac{1}{2}$	-- 1	(bb) -	2	1	$1\frac{1}{2}$	-- 1
(18) -	$1\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	-- 1	(cc) -	2	$1\frac{1}{2}$	$\frac{1}{2}$	-- -
(19) -	$1\frac{1}{2}$	$1\frac{1}{2}$	1	-- 1	(dd) -	2	$1\frac{1}{2}$	1	-- -
(20) -	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	-- -	(ee) -	2	2	$\frac{1}{2}$	-- -

**To avoid confusion with the Signs: (1), m, W, & (x-) in the other two columns, NO signs of (1), (m) (w), nor (x) are use in this column.

**TRICHORD SIGNS
CHART #2**

Scale Point Interval Combinations for (Last) Trichord, 5-Tone Scales (NOT as 8-Tone Con-Int)				
Sign	Interval Combin.			Times Found
(x-1) -	$\frac{1}{2}$	$\frac{1}{2}$	---	-
(x-2) -	$\frac{1}{2}$	1	---	2
(x-3) -	$\frac{1}{2}$	$1\frac{1}{2}$	---	-
(x-4) -	$\frac{1}{2}$	2	---	6
(x-5) -	1	$\frac{1}{2}$	---	2
(x-6) -	1	1	---	3
(x-7) -	1	$1\frac{1}{2}$	---	8
(x-8) -	1	2	---	2
(x-9) -	$1\frac{1}{2}$	$\frac{1}{2}$	---	1
(x-10) -	$1\frac{1}{2}$	1	---	8
(x-11) -	$1\frac{1}{2}$	$1\frac{1}{2}$	---	1
(x-12) -	$1\frac{1}{2}$	2	---	1
(x-13) -	2	$\frac{1}{2}$	---	5
(x-14) -	2	1	---	6
(x-15) -	2	$1\frac{1}{2}$	---	1
(x-16) -	2	2	---	-

*These totals include first & last tetrachords & the middle tetrachord of the 9-Tone Scales. But they do *not* include Combination Scales nor scales more than an octave.

HOW MY TETRACHORDS & TRICHORDS CAME BY THEIR SIGNS

CHART #3

SIGN	= INTERVALS	= EXPLANATION
M	= 1-1- $\frac{1}{2}$	= The intervals of the 1st and 2nd Tetrachords of #1 <u>Major</u> Scale
m	= 1- $\frac{1}{2}$ -1	= The intervals of the 1st Tetrachord of the common <u>minor</u> scales (#49 Natural <u>minor</u> , #34 Melodic <u>minor</u> , and #47 Harmonic <u>minor</u>)
mN	= $\frac{1}{2}$ -1-1	= The intervals of the 2nd Tetrachord of #49 Natural minor scale (<u>minor</u> <u>Natural</u>)
mH	= $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	= The intervals of the 2nd Tetrachord of #47 Harmonic minor (<u>minor</u> <u>Harmonic</u>)
Aug	= 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	= Intervals of the 1st Tetrachord of #80, the <u>Augmented</u> Scale
W	= 1-1-1	= The intervals of the 1st and 2nd Tetrachords of #97, the <u>Whole</u> Tone Scale
Dim	= $\frac{1}{2}$ -1- $\frac{1}{2}$	= The intervals of the 1st Tetrachord of #109 <u>Diminished</u> #2 Scale and the 2nd Tetrachord of #125 <u>Diminished</u> #1 Scale
(1) - (20)		= Signs given to the remaining 20 Tetrachords with intervals involving $\frac{1}{2}$, 1, and/or 1 $\frac{1}{2}$ steps
(a) - (ee)		= signs given to the 27 possible Tetra-chords that contain one interval of 2 whole steps along with $\frac{1}{2}$, 1, and/or 1 $\frac{1}{2}$ step intervals
(x-1) - (x-16)		= signs given to the 16 Trichords used in the 5-Tone Scales

**NUMBER OF TIMES TETRACHORDS & TRICHORDS ARE USED
IN 5-TONE, 6-TONE, 7-TONE, 8-TONE, & 9-TONE* SCALES****

CHART #4

TETRACHORDS													TRICHORDS		
Sign	Times as 1st Tet in This Tone Group					Sub- total	Times as Last Tet in This Tone Group					Sub- total	Times Used: TOTAL	***Times Used: Trichord TOTAL	
	5	6	7	8	9			6	7	8	9				
M...	1	2	8	4	1	....16..	..	3	7	4	2	....16..	.....32	(x-2)....2	
m...	-	4	8	6	-	....18..	..	6	9	5	1	....21..	.....39	(x-4)....6	
mN...	1	4	6	4	-	....15..	..	2	8	5	1	....16..	.....31	(x-5)....2	
mH...	-	3	9	2	-	....14..	..	2	7	-	-	....9..	.....23	(x-6)....3	
W...	1	3	5	1	-	....10..	..	3	5	2	-	....10..	.....20	(x-7)....8	
Dim...	-	-	2	5	1	....8..	..	-	2	6	2	....10..	.....18	(x-8)....2	
Aug...	1	1	-	-	-	....2..	..	1	-	-	-	....1..	.....3	(x-9)....1	
(1)...	-	-	-	2	2	....4..	..	-	-	2	2	....4..	.....8	(x-10)....8	
(2)...	1	-	-	2	2	....5..	..	-	2	3	2	....7..	.....12	(x-11)....1	
(3)...	-	-	2	-	-	....2..	..	-	3	-	-	....3..	.....5	(x-12)....1	
(4)...	1	3	1	-	-	....5..	..	1	-	-	-	....1..	.....6	(x-13)....5	
(5)...	2	3	4	-	-	....9..	..	1	2	-	-	....3..	.....12	(x-14)....6	
(6)...	3	-	-	-	-	....3..	..	-	-	-	-	....-..	.....3	(x-15)....1	
(7)...	-	-	2	3	4	....9..	..	-	4	2	-	....6..	.....15		*Does not include middle tetrachord of 9-Tone Scales.
(8)...	-	-	4	-	-	....4..	..	-	-	-	-	....-..	.....4		
(9)...	4	2	-	-	-	....6..	..	3	-	-	-	....3..	.....9		**Does not include Combination Scales nor scales of more than an octave.
(10)...	1	-	-	-	-	....1..	..	1	1	-	-	....2..	.....3		
(11)...	4	3	-	-	-	....7..	..	3	-	-	-	....3..	.....10		
(13)...	-	-	4	-	-	....4..	..	-	1	-	-	....1..	.....5		
(14)...	1	-	1	-	-	....2..	..	3	4	-	-	....7..	.....9		
(15)...	1	1	1	-	-	....3..	..	1	1	-	-	....2..	.....5		
(16)...	2	3	-	-	-	....5..	..	2	-	-	-	....2..	.....7		***5-Tone Scales only
(17)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(18)...	-	-	-	-	-	....-..	..	1	-	-	-	....1..	.....1		
(19)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(a)...	-	-	-	-	-	....-..	..	1	-	-	-	....1..	.....1		
(b)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(d)...	2	1	-	-	-	....3..	..	-	1	-	-	....1..	.....4		
(e)...	3	1	-	-	-	....4..	..	-	-	-	-	....-..	.....4		
(h)...	3	1	-	-	-	....4..	..	3	-	-	-	....3..	.....7		
(k)...	2	1	-	-	-	....3..	..	-	-	-	-	....-..	.....3		
(p)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(q)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(u)...	3	1	-	-	-	....4..	..	-	-	-	-	....-..	.....4		
(y)...	2	-	-	-	-	....2..	..	-	-	-	-	....-..	.....2		
(z)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(aa)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		
(bb)...	1	-	-	-	-	....1..	..	-	-	-	-	....-..	.....1		

*Does *not* include
middle tetrachord
of 9-Tone Scales.

**Does *not* include
Combination Scales
nor scales of more
than an octave.

***5-Tone Scales only

[illegible]

**SCALE NUMBERS OF 6-TONE SCALES
THAT ARE FORMED BY SPECIFIC TETRACHORDS**

CHART #6

1st Tetra. ↓	2nd Tetrachord →																
	M	m	mN	mH	W	Aug	(4)	(5)	(9)	(10)	(11)	(14)	(15)	(16)	(18)	(a)	(h)
M	103	...	102	...	...	...	...	...	...
m	94	...	92	...	...	90	...	...	93
mN	76	...	...	...	...	72	70	...	74
mH	82	...	...	...	...	84	...	...	...	...	...	83
W	97	...	99	...	...	...	...	98	...	...	...	...	...
Aug	80	...	...	...	...	...	...	...	...	...	...	...	...	...
(4)	68	...	...	...	...	67	...	69	...	...	...	...	...
(5)	79	78	...	...	81	...
(9)	96	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(11)	86	95	...	91	...	...	...	...	...	...	...	...	...	...	...	...	...
(15)	66	...	...	...	...	...	...	...	...	...
(16)	65	77	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d)	71	...	...	...	...	...	...	...	...	...	...	...	...
(e)	73	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(h)88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(k)89	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(u)85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE: This chart does not include the Combination Scales
(see page 124 for those)

SCALE NUMBERS OF 7-TONE SCALES THAT ARE FORMED BY SPECIFIC TETRACHORDS

CHART #7

1st Tetra.	2nd Tetrachord —————>														
↓	M	m	mN	mH	W	Dim	(2)	(3)	(5)	(7)	(10)	(13)	(14)	(15)	(d)
M	1	62	61	60	57	56	59	...	...	...	....	....	58	....	...
m	34	50	49	47	45	...	...	48	...	...	....	....	46	....	38
mN	6	16	15	14	12	...	...	...	...	...	....	....	13	....	...
mH	2	33	31	30	27	...	...	...	...	24	26	....	28	23	...
W	51	55	54	....	...	52	...	...	...	53	....	....	....	....	...
Dim	...	...	11	....	8	...	...	...	...	...	....	....	....	....	...
(3)	...	...	...	....	...	...	...	4	3	...	....	....	....	....	...
(4)	...	...	...	10	...	...	...	...	...	...	....	....	....	....	...
(5)	17	21	...	20	...	...	...	...	...	19	....	....	....	....	...
(7)	...	...	43	....	...	...	...	41	...	...	....	....	....	....	...
(8)	37	44	42	40	...	...	...	...	...	...	....	....	....	....	...
(13)	...	32	...	....	...	...	29	...	18	25	....	....	....	....	...
(14)	...	22	...	....	...	...	...	...	...	...	....	...	....	....	...
(15)	...	...	...	....	...	...	...	...	...	...	....	9	....	....	...

NOTE: This chart does not include the Combination Scales (see page 124)

SCALE NUMBERS OF 8-TONE SCALES THAT ARE FORMED BY SPECIFIC TETRACHORDS

CHART #8

1st Tetra.	2nd Tetrachord —————>							
↓	M	m	mN	W	Dim	(1)	(2)	(7)
M	131	133	....	....	134	136	....	....
m	...	...	....	....	125	130	126	129
					127		128	
mN	...	...	114	....	115	....	117	116
mH	118	...	....	....	120	....	....	....
W	...	...	....	....	132	....	....	....
Dim	...	109	111	110	....	....	....	....
		112	113					
(1)	...	...	106	105	....	....	....	....
(2)	104	...	....	....	....	....	....	....
	107							
(7)	...	121	122	108	....	....	....	....
		123						

NOTE: This chart does not contain scales over an octave except #108

TETRACHORD COMBINATIONS THAT FORM 6-TONE, 7-TONE, & 8-TONE SCALES

CHART #9

1st Tetra.	2nd Tetrachord →																			
↓	M	m	mN	mH	W	Dim	Aug	(1)	(2)	(3)	(4)	(5)	(7)	(9)	(10)	(11)	(13)	(14)	(15)	(16)
M	.7.8.	.7.8.	.7..	.7.	.7.	.7.8.	...	.8.	.7..	...	...	...	...	.6.	...	.6.	...	.7.	...	...
m	.7..	.7..	.7..	.7.	.7.	.8.8.	...	.8.	.8.8.	.7.	...	...	.8.	.6.	...	.6.	...	.7.	...	.6.
mN	.7..	.7..	.7.8.	.7.	.7.	.8.	...	...	.8.	...	...	...	.8.	...	...	.7.	...	.6.	...	.6.
mH	.7.8.	.7..	.7.	.7.	.7.	.8.	.6.	...	...	...	...	...	.7.	...	.7.	.6.	...	.7.	.7.	.6.
W	.7..	.7..	.7..	...	.6.	.7.8.	...	...	...	...	.6.	...	.7.	...	...	...	...	.6.	...	...
Dim	...	.8.8.	.7.8.8.	...	.7.8.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aug	...	...	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(1)	...	...	.8.	...	.8.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(2)	.8.8.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(3)	...	...	...	...	...	...	...	...	...	.7.	...	...	.7.	...	...	...	...	...	...	...
(4)	...	...	...	.7.	.6.	...	...	...	...	...	...	...	...	...	.6.	...	...	.6.	...	...
(5)	.7..	.7..	...	.7.	...	...	...	...	...	...	...	...	.7.	...	...	...	...	.6.	.6.	...
(7)	...	.8.8.	.7.8.	...	.8.	...	...	...	...	.7.	...	...	...	...	...	...	...	...	...	.6.
(8)	.7..	.7..	.7.	.7.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(9)	.6.	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(11)	.6.	.6.	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(13)	...	.7.	...	...	...	...	...	...	.7.	...	...	.7.	.7.	...	...	...	...	...	...	...
(14)	...	.7.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(15)	...	...	...	...	...	...	...	...	...	...	...	.6.	...	...	...	.7.	...	...	...	...
(16)	.6.	.6.	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(d)	...	...	...	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(e)	...	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(h)	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(k)	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(u)	...	.6.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE: This chart does not include Combination Scales nor scales over an octave.

CHAPTER 4

TWO WAYS TO FIND A SCALE USING THIS BOOK

CONTENTS OF CHAPTER 4:

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WHY MIGHT YOU WANT "TO FIND" A SCALE?

Let us suppose that you are playing a piece of music and that you notice that one particular note in the piece (or portion of a piece) always has an accidental (a flat, a sharp, or a natural). Or, let us suppose that you are listening to some music, and you hear a piece that sounds very "different". In either case, you are curious! You ask yourself, "I wonder what kind of a scale is being used?"! Well, by using this book and one of its two methods, you can probably find out not only what scale is being used, but also some interesting facts about that scale if you have the desire to do so. This book contains two methods (on the following pages) for identifying musical scales:

Method #1 deals with how a scale differs from the Major Scale (its SYMBOL). This is the easier method but is not so reliable with non-7-Tone Scales, since scale spelling may differ.

Method #2 deals with the INTERVALS between the notes of a scale and with its FORMULA. This is the foolproof method!

STEPS IN COMMON FOR BOTH METHODS

The first steps for both methods are the same:

1. First establish in what key the piece (or section under question) is written. Often this can be done by observing the last note or chord of the piece or portion.
2. Now go through the piece or portion and see which notes are used and write them down so that you know which notes are involved in this scale. (An example might be that the piece uses C, B, G, E♭, D♭, A♭, and F♯.)

NOTE: Be careful to put down *only* the notes that are actually used in the melody or harmony of the piece and that aren't obviously ornamentals.

NOTE: If certain notes are never used in the piece (for instance, say that the 3rd Scale Point Tone is never used in the piece, not even in a "run"), then don't put the 3rd Scale Point down as part of your scale. You may be dealing with a 5-Tone or a 6-Tone Scale.

NOTE: Conversely from the previous Note, you may find that there seems to be an "extra" note consistently. Perhaps the 3rd Scale Point Tone appears all of the time as well as the flatted 3rd Scale Point Tone's appearing all of the time, especially if in "runs". Then put them down as being part of your scale. You may be dealing with an 8-Tone or 9-Tone Scale.

- Put the notes that you find in the piece into consecutive (alphabetical) order, beginning and ending with the tonic (the first note of the key; for instance "D" is the "tonic" in the Key of "D"). These first three Steps are common to both Methods of finding out what the scale is that you are trying to locate. From here on, the two Methods go by different routes: (For clarity we'll review the first three steps with each Method.)

METHOD #1 (by SYMBOL):

- Establish the key.
- Write down which notes are involved.
- Put the notes in consecutive (alphabetical) order, beginning with the tonic.
- Play a Major Scale in your key, and see which notes would be involved. Let's use the Key of D for an example. In the Key of D, the notes of D Major are D, E, F#, G, A, B, C#, d.
- Now compare the Major Scale with the scale you are trying to identify and see where your scale *differs* from the Major Scale. Let's say that the "C" in your scale, instead of being "C#" as it would be in the D Major Scale, is *always* "C \flat ", but otherwise your scale is the same as a D Major Scale. That would make your scale "read" D, E, F#, G, A, B, C, d. Now count which scale point tone this is. "D" is the 1st, "E" is the 2nd, etc., until you come to "C" which is the 7th note (Scale Point Tone) in the Key of D. In the "normal" D Major Scale, the 7th scale point is "C#", but in this piece the 7th scale point is "C \flat ". This means that your 7th scale point has been lowered (flatted) a half step, but otherwise you have a "normal" Major Scale. So write down "Major 7-". This shows *how* your scale is different from the Major Scale -- and this is the SYMBOL of the scale in your piece.

NOTE: If your scale had, let's say, a "G#" instead of a "G \flat " along with the "C \flat " and "F#", you would count up and see that the "G#" was the 4th Scale Point. So you would have a raised 4th along with your lowered 7th scale point, and you would write "Major 4+ 7-".

NOTE: If your scale had, again, "F#" and "G#", but never had an "A" in it anywhere, you would have an omitted tone. Since "A" is the 5th Scale Point in the Key of "D", you would have an omitted 5th and would write for your symbol "Major 4+ 5 omit 7-". This is a 6-Tone Scale.

NOTE: Let's say that your scale had the "F#", but it also consistently had a "C#" along with the "C \flat ". Then you would write down "Major 7- 7" as your Symbol. This is an 8-Tone Scale.

6. Take the Symbol you have written down (Major 7-, in our first example above). Turn to Chart #13, "Scales by Symbols & Alternate Symbols in Order of Numerical Alterations" (starting on page 85). Turn to near the end of this Chart until you see "--7--" on the left side and then under this, scales that start with "Major 7...". There you will find your "Major 7-", and looking across the line you will see that I have numbered it #62, and that its name is "Mixolydian". You now know that you were playing (or listening to) a piece in the Mixolydian Scale.
7. You may stop now. Or you may turn to The Grand Finale, starting on page 405 (which lists the 198 scales of this book in numerical order) and find out all sorts of interesting things about #62, the Mixolydian Scale.

ITEM OF INTEREST:

This method (Method #1) doesn't have to be used only with an entire piece. It may be used in just a short portion of a piece where there is an interesting "run". For instance, in "May Night" by Selim Palmgren, there is an interesting section in the 7th to the 9th measures where the left hand seems to be playing a scale. A quick use of the above method showed me that this run is like the Major Scale except the 4th Scale Point is omitted and the 5th, 6th, and 7th Scale Points are each lowered (flatted) a half note (making Major 4 omit 5- 6- 7-). Taking this to the chart on Symbols mentioned above, I found out that this is the Whole Tone Scale. Interesting, no?!

METHOD #2 (by INTERVALS & FORMULA):

1. Establish the key. (Let's use the key of G.)
2. Write down which notes are involved. (Example: C, B, G, E \flat , D \flat , A \flat , F \sharp).
3. Put the notes in consecutive order. (G, A \flat , B, C, D \flat , E \flat , F \sharp , g)
4. Now go through and figure out the intervals between the various notes of your scale. (An interval is the distance between two notes in half steps.) In our example the intervals are:

G	to	A \flat	=	$\frac{1}{2}$ step
A \flat	to	B	=	$1\frac{1}{2}$ steps
B	to	C	=	$\frac{1}{2}$ step
C	to	D \flat	=	$\frac{1}{2}$ step
D \flat	to	E \flat	=	1 step
E \flat	to	F \sharp	=	$1\frac{1}{2}$ steps
F \sharp	to	g	=	$\frac{1}{2}$ step

5. Now CHECK yourself by adding up the intervals. In our example:

$$\frac{1}{2} + 1\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + 1 + 1\frac{1}{2} + \frac{1}{2} = 6 \text{ whole steps}$$

THIS IS VERY IMPORTANT, because unless you have one of the few scales that covers more than an octave, *the intervals should always equal 6*. Remember, an octave contains exactly 6 whole steps. If your scale's intervals do *not* equal exactly 6 whole steps, go back and re-figure the intervals of your scale, because there is an error somewhere. Without an accurate computation of the intervals, you cannot identify your scale by this method.

6. You can stop at this point and go to page 102, to Chart #14, "Scales by Intervals", but I would advise you to go on to the next steps.
7. Now that all of your intervals equal 6, write down all of the intervals in order. In our example: $\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
8. Divide these intervals into Tetrachords with brackets in the following manner (using our example):

- a. The first 3 intervals are the first tetrachord:

$$\underbrace{\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}}_{\text{first tetrachord}} - \frac{1}{2} - 1 - 1\frac{1}{2} - 1$$

- b. The last 3 intervals make up the second tetrachord (or, in the case of 9-Tone scales, the last tetrachord):

$$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}- \underbrace{1-1\frac{1}{2}-\frac{1}{2}}_{\text{second tetrachord}}$$

- c. The interval(s) left over in the middle is a Connecting Interval(s) connecting the two tetrachords (except in the case of a 9-Tone Scale where the 3 "left over" intervals are another tetrachord). (5-Tone and 6-Tone Scales have no connecting intervals.)

$$\text{So we now have: } \underbrace{\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}}_{\text{first tetrachord}} - \frac{1}{2} - \underbrace{1-1\frac{1}{2}-\frac{1}{2}}_{\text{second tetrachord}}$$

9. Turn to page 24, Chart #1, "Tetrachord Signs". Since none of your intervals contain 2 whole steps, use the left hand part of the Chart. Now identify your tetrachords by matching them to the scale intervals on the Chart:

$$\begin{array}{rcl} \frac{1}{2}-1\frac{1}{2}-\frac{1}{2} & = & \text{mH} \\ 1-1\frac{1}{2}-\frac{1}{2} & = & (10) \end{array}$$

10. Write the tetrachord signs under the intervals that you bracketed in Step 8 (above):

$$\begin{array}{ccc} \frac{1}{2} - 1\frac{1}{2} - \frac{1}{2} & -\frac{1}{2} - & 1 - 1\frac{1}{2} - \frac{1}{2} \\ \hline \text{mH} & & (10) \end{array}$$

11. Now write down these tetrachord signs with the Connecting Interval in consecutive Order:

$$\text{mH} - \frac{1}{2} - (10)$$

This is the Tetrachordal Formula (or FORMULA, as it will usually be written in this book) of the scale you are trying to identify.

NOTE: Although there can often be several Alternate Symbols for a particular scale, *there can be ONLY ONE FORMULA for each Scale.* (The Formula is based upon intervals, which don't change.)

12. Turn to page 113, Chart #15, "All Scales by 1st Tetrachord (by Formula)". Since your first Tetrachord is "mH", go down the first column on the left (labeled "1st Tet") until you come to the "mH"s. Now go down the "mH"s until you find "mH - $\frac{1}{2}$ - (10)". This is the Formula of your scale, and you now have the identification of your scale. It is #26 Persian.
13. You may stop now. Or you may turn to The Grand Finale, starting on page 405, (which lists the 198 scales of this book in numerical order) and find a summary of all of the things I have been able to find out about "#26 Persian", your now-identified scale.

Now go ahead and enjoy yourself! Remember, this book was born as a result of curiosity and for the real pleasure involved. Each part, as it formed, has been a great joy to me, the author.

NOTE: A very quick summary of these two Methods follows on the next page.

**SUMMARY OF METHOD #1 FOR IDENTIFYING A SCALE
(by SYMBOL)**

(Careful! Scale "Spellings" may differ!)

1. Establish the key.
2. Write down which notes are involved.
3. Put the notes in consecutive order.
4. Write down the notes of the Major Scale in your key.
5. Compare your scale with the Major Scale. Write down all of the differences with the Scale Point Tone and "-", "+", or "omit" as appropriate (SYMBOL).
6. Find your Symbol on Chart #13, page 85, "Scales by Symbols & Alternate Symbols".
7. Stop here or use the Scale Number from Chart #13 to look up your Scale in The Grand Finale, starting on page 405.

**SUMMARY OF METHOD #2 FOR IDENTIFYING A SCALE
(by INTERVALS & FORMULA)**

(The "Fool Proof" Method)

1. Establish the key.
2. Write down which notes are involved.
3. Put the notes in consecutive order.
4. Write down the intervals between the notes, in consecutive order.
5. Add up the intervals. They **MUST** equal 6 whole notes; if not, go back and re-do Step #4, above.
6. You may now go to Chart #14, page 102, "Scales by Intervals", or you may carry out the remaining steps.
7. Divide the Intervals into 1st Tetrachord, Connecting Interval(s), and 2nd Tetrachord (or Trichord, in the case of a 5-Tone Scale).
8. Find the Tetrachord Signs (page 24) and write them down in proper order with the Connecting Interval(s). This is the **FORMULA**.
9. Find your Formula on Chart #15, "Scales by 1st Tetrachord (Formula)", page 113. This gives you the scale's Name and Number.
10. Stop here or use the Scale Number from the Chart to look up your scale in The Grand Finale, starting on page 405, for all sorts of interesting things about your scale.

HOW THE DIFFERENT TONE GROUPS LOOK WHEN MAKING THE FORMULA BY DIVIDING INTO TETRACHORDS (with examples)

CHART #10

5-TONE SCALES:	$ \begin{array}{ccccccc} C & - & E & - & F & - & G & - & A & - & c \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ 2 & - & \frac{1}{2} & - & 1 & - & 1 & - & 1\frac{1}{2} \\ \hline (u) & & & & & & & & (x-7) \end{array} $	<p>= notes of scale</p> <p>= intervals involved; 6 whole steps</p> <p>= 1 tetrachord & 1 trichord</p>
6-TONE SCALES:	$ \begin{array}{ccccccc} C & - & D\sharp & - & E & - & G & - & A\flat & - & B & - & c \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ 1\frac{1}{2} & - & \frac{1}{2} & - & 1\frac{1}{2} & - & \frac{1}{2} & - & 1\frac{1}{2} & - & \frac{1}{2} \\ \hline Aug & & & & & & & & mH \end{array} $	<p>= notes of scale</p> <p>= intervals involved; 6 whole steps</p> <p>= 2 tetrachords</p>
7-TONE SCALES:	$ \begin{array}{ccccccc} C & - & D & - & E & - & F\sharp & - & G & - & A & - & B & - & c \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ 1 & - & 1 & - & 1 & - & \frac{1}{2} & - & 1 & - & 1 & - & \frac{1}{2} \\ \hline W & & & & & & & & M \end{array} $	<p>= notes of scale</p> <p>= intervals involved; 6 whole steps</p> <p>= 2 tetrachords & 1 connecting interval</p>
8-TONE SCALES:	$ \begin{array}{ccccccc} C & - & D\flat & - & E & - & F & - & F\sharp & - & G & - & A & - & B & - & c \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ \frac{1}{2} & - & 1\frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & - & 1 & - & 1 & - & \frac{1}{2} \\ \hline mH & & & & & & & & M \end{array} $	<p>= notes of scale</p> <p>= intervals; 6 whole steps</p> <p>= 2 tetrachords & 2 connecting intervals</p>
9-TONE SCALES:	$ \begin{array}{ccccccc} C & - & D & - & E\flat & - & E & - & F & - & G & - & A & - & B\flat & - & B & - & c \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ 1 & - & \frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & - & 1 & - & 1 & - & \frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} \\ \hline (7) & & & & & & & & mN & & & & & & & & (1) \end{array} $	<p>= notes</p> <p>= intervals; 6 steps</p> <p>= 3 tetrachords</p>
10-TONE SCALES:	$ \begin{array}{ccccccc} C & - & D & - & E\flat & - & F\sharp & - & G & - & A\flat & - & B & - & c & - & d & - & e & - & f \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \\ 1 & - & \frac{1}{2} & - & 1\frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & - & 1\frac{1}{2} & - & \frac{1}{2} & - & 1 & - & 1 & - & \frac{1}{2} \\ \hline (8) & & & & & & & & mH & & & & & & & & M \end{array} $	<p>= notes</p> <p>= more than an octave</p> <p>= 7-Tn Sc1 + 1 tetrachrd</p>

SECTION B

VARIOUS CHARTS

WITH ALL SCALES OF THIS BOOK

(Charts Put Together Differently For Specific Reasons)

CONTENTS OF SECTION B

Chapter 5:	Chart #11:	Scales in Numerical Order (#1 - #198) with NOTES on a STAFF	Page 43
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Chapter 7:	Chart #13:	Scales by SYMBOLS & ALTERNATE SYMBOLS ...	81
Chapter 8:	Chart #14:	Scales in INTERVALS	97
Chapter 9:	Chart #15:	Scales by 1st Tetrachord (FORMULA)	109
Chapter 10:	Six Short Miscellaneous Charts		121

CHAPTER 5

SCALES IN NUMERICAL ORDER (#1 - #198)

WITH NOTES ON A STAFF

CONTENTS OF CHAPTER 5:

Regarding Chart #11,	Page 45
Chart #11, All Scales in This Book on a Staff:	
7-Tone Scales (#1 - #63)	46
6-Tone Scales (#64 - #103)	53
8-Tone Scales (#104 - #136)	57
9-Tone Scales (#137 - #149)	61
10-Tone Scales (#150 - #152)	62
5-Tone Scales (#153 - #198)	63
Western Chromatic Scales (#199 - #202)	68

REGARDING CHART #11, "SCALES WITH NOTES ON A STAFF"

This following chart is probably the simplest chart for a person who just wants to see the various scales without having to read anything else in this book.

There are advantages and one big disadvantage to using just this chart. The advantages are that the scales can all be easily seen in 3 ways:

- 1) with notes on a staff
- 2) by intervals between the notes
- 3) by how the scale differs from the Major Scale

The disadvantage, and I believe it is a big one, is that if a person uses just this chart, he will miss out on so many interesting things about the scales!





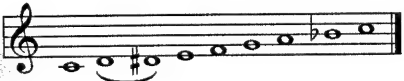



This chart can be used without any explanation at all. However, I do want to point out that the intervals are not simply put down ("1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ "). The intervals are space out ("1-1- $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$ "), dividing them into tetrachords. This, in my opinion, makes the intervals much easier to see and remember. (Tetrachords are explained and charted in Chapter 3.)

NOTE: Remember, the Scale Number can be used to look up each scale in The Grand Finale (starting on page 405) in order to learn more about that scale. All of the information in this book about each scale is listed under that scale in The Grand Finale.

**ALL SCALES IN NUMERICAL ORDER
WITH NAME, SYMBOL, INTERVALS, & NOTES ON A STAFF**

CHART #11


7-TONE SCALES:

- #1 MAJOR
Major
1-1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ 
- #2 ANANDA (Hindu)
Major 2-
 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ 
- #3 CHROMATIC MIXOLYDIAN, ASC.
Major 2- 2 3+ 4+ 6+ 7omit
 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 
- #4 CHROMATIC DORIAN, ASC.
Major 2- 2 3omit 6- 6 7omit
 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ 
- #5 JEWISH (combines #32 & #62)
Major [2/2+] 7-
[1-1- $\frac{1}{2}$ / 1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$] -1- 1- $\frac{1}{2}$ -1 
- #6 NEAPOLITAN-MAJOR
Major 2- 3-
 $\frac{1}{2}$ -1-1 -1- 1-1- $\frac{1}{2}$ 
- #7 POLISH (combines #15 & #31)
Major 2- [3-/3] 6- 7-
[$\frac{1}{2}$ -1-1 / $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$] -1- $\frac{1}{2}$ -1-1 
- #8 SUPER-LOCRIAN
Major 2- 3- 4- 5- 6- 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- 1-1-1 


(cont'd)

All Scales in Numerical Order with Staff (cont'd)

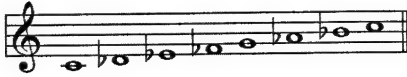
#9 CHROMATIC HYPOPHRYGIAN, ASC.
Major 2+ 3+ 4+ 6+
 $1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$



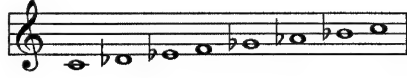
#10 RAGA TODI (Hindu)
Major 2- 3- 4+ 6-
 $\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$




#11 BYZANTINE
Major 2- 3- 4- 6- 7-
 $\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1$



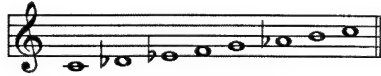
#12 LOCRIAN
Major 2- 3- 5- 6- 7-
 $\frac{1}{2}-1-1-\frac{1}{2}-1-1-1$



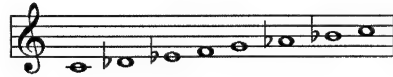
#13 HIJAZI
Major 2- 3- 5- 7-
 $\frac{1}{2}-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$



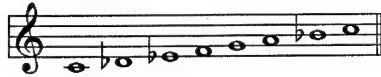
#14 NEAPOLITAN-MINOR
Major 2- 3- 6-
 $\frac{1}{2}-1-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$




#15 PHRYGIAN
Major 2- 3- 6- 7-
 $\frac{1}{2}-1-1-1-\frac{1}{2}-1-1$



#16 JAVANESE
Major 2- 3- 7-
 $\frac{1}{2}-1-1-1-1-\frac{1}{2}-1$



#17 MARAVA (Hindu)
Major 2- 4+
 $\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}$




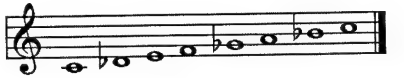





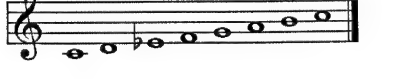
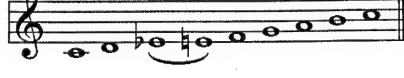
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All Scales in Numerical Order with Staff (cont'd)

- #18 BLUES
Major 2+ 4 4+ 6omit 7-
 $1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2} -1\frac{1}{2}- 1\frac{1}{2}-1\frac{1}{2}-1$
- #19 ENIGMATIC (Ascending) (Verdi)
Major 2- 4+ 5+ 6+
 $\frac{1}{2}-1\frac{1}{2}-1 -1- 1-\frac{1}{2}-\frac{1}{2}$
- #20 CHROMATIC HYPOLYDIAN, ASC.
Major 2- 4+ 6-
 $\frac{1}{2}-1\frac{1}{2}-1 -1\frac{1}{2}- 1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
- #21 INDIA
Major 2- 4+ 7-
 $\frac{1}{2}-1\frac{1}{2}-1 -1\frac{1}{2}- 1-\frac{1}{2}-1$
- #22 HUNGARIAN-MAJOR
Major 2+ 4+ 7-
 $1\frac{1}{2}-1\frac{1}{2}-1 -1\frac{1}{2}- 1-\frac{1}{2}-1$
- #23 CHROMATIC LYDIAN, ASC.
Major 2- 5-
 $\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2} -1\frac{1}{2}- 1\frac{1}{2}-1-\frac{1}{2}$
- #24 ENIGMATIC, DESC.-INVERTED
Major 2- 5+ 6+
 $\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2} -1\frac{1}{2}- 1-\frac{1}{2}-\frac{1}{2}$
- #25 CHROMATIC PHRYGIAN, ASC.
Major 2+ 5+ 6+
 $1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2} -1\frac{1}{2}- 1-\frac{1}{2}-\frac{1}{2}$
- #26 PERSIAN
Major 2- 5- 6-
 $\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2} -1\frac{1}{2}- 1-1\frac{1}{2}-\frac{1}{2}$






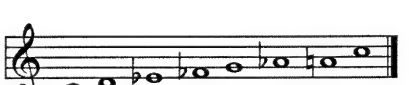
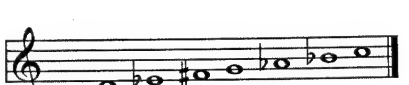
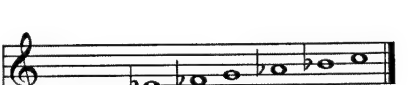

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All Scales in Numerical Order with Staff (cont'd)

- #27 RAHAWI (Arabic) 
- Major 2- 5- 6- 7-
1/2-1 1/2-1/2 -1/2- 1-1-1
- #28 ORIENTAL 
- Major 2- 5- 7-
1/2-1 1/2-1/2 -1/2- 1 1/2-1/2-1
- #29 PERSIAN 
- Major 2+ 5+ 7-
1 1/2-1/2-1/2 -1 1/2- 1/2-1/2-1
- #30 DOUBLE HARMONIC 
- Major 2- 6-
1/2-1 1/2-1/2 -1- 1/2-1 1/2-1/2
- #31 SPANISH 
- Major 2- 6- 7-
1/2-1 1/2-1/2 -1- 1/2-1-1
- #32 ROUMANIAN-MAJOR 
- Major 2+ 7-
1 1/2-1/2-1/2 -1- 1-1/2-1
- #33 ARABIC 
- Major 2- 7-
1/2-1 1/2-1/2 -1- 1-1/2-1
- #34 MELODIC MINOR 
- Major 3-
1-1/2-1 -1- 1-1-1/2
- #35 AREZZO (Italy) (comb. #1 & #34) 
- Major [3-/3]
[1-1-1/2 / 1-1/2-1] -1- 1-1-1/2

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

- #36 BASQUE (combines #50 & 62) 
Major [3-/3] 7-
[1-1-1/2 / 1-1/2-1] -1- 1-1/2-1
- #37 LYDIAN-DIMINISHED 
Major 3- 4+
1-1/2-1 1/2 -1/2- 1-1-1/2
- #38 CONWAY'S 7-TONE 
Major 3- 4 4+ 6omit
1-1/2-1 -1/2- 1/2-2-1/2
- #39 TURKISH (combines #44 & #50) 
Major 3- [4/4+] 7-
[1-1/2-1 -1- / 1-1/2-1 1/2 -1/2-] 1-1/2-1
- #40 HUNGARIAN-MINOR 
Major 3- 4+ 6-
1-1/2-1 1/2 -1/2- 1/2-1 1/2-1/2
- #41 CHROMATIC HYPODORIAN, ASC. 
Major 3- 4- 6- 6 7omit
1-1/2-1/2 -1 1/2- 1/2-1/2-1 1/2
- #42 GREEK 
Major 3- 4+ 6- 7-
1-1/2-1 1/2 -1/2- 1/2-1-1
- #43 GREEK 
Major 3- 4- 6- 7-
1-1/2-1/2 -1 1/2- 1/2-1-1
- #44 ROUMANIAN-MINOR 
Major 3- 4+ 7-
1-1/2-1 1/2 -1/2- 1-1/2-1

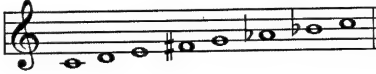
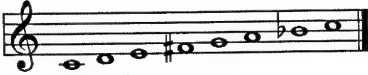
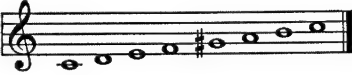
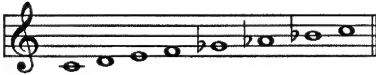
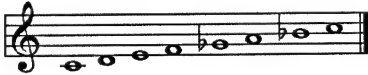
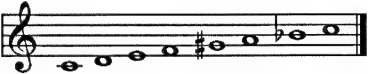
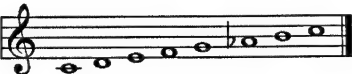
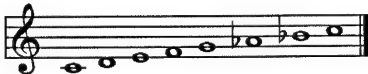
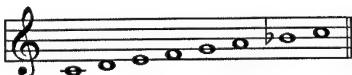
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All Scales in Numerical Order with Staff (cont'd)

-
- #45 HALF-DIMINISHED
Major 3- 5- 6- 7-
1-½-1 -½- 1-1-1
- #46 ZANGULA (Arabic)
Major 3- 5- 7-
1-½-1 -½- 1½-½-1
- #47 HARMONIC-MINOR
Major 3- 6-
1-½-1 -1- ½-1½-½
- #48 PTOLEMY'S MIXED HYPODORIAN ...
Major 3- 6- 6 7omit
1-½-1 -1- ½-½-1½
- #49 NATURAL MINOR
Major 3- 6- 7-
1-½-1 -1- ½-1-1
- #50 DORIAN
Major 3- 7-
1-½-1 -1- 1-½-1
- #51 LYDIAN
Major 4+
1-1-1 -½- 1-1-½
- #52 LYDIAN-AUGMENTED
Major 4+ 5+
1-1-1 -1- ½-1-½
- #53 LEADING WHOLE-TONE
Major 4+ 5+ 6+
1-1-1 -1- 1-½-½
-

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

- #54 LYDIAN-MINOR 
Major 4+ 6- 7-
1-1-1 -1/2- 1/2-1-1
- #55 OVERTONE 
Major 4+ 7-
1-1-1 -1/2- 1-1/2-1
- #56 IONIAN-AUGMENTED 
Major 5+
1-1-1/2 -1 1/2- 1/2-1-1/2
- #57 LOCRIAN-MAJOR 
Major 5- 6- 7-
1-1-1/2 -1/2- 1-1-1
- #58 ZENKLA (Arabic) 
Major 5- 7-
1-1-1/2 -1/2- 1 1/2-1/2-1
- #59 RUMMEL-MEIA (Arabic) 
Major 5+ 7-
1-1-1/2 -1 1/2- 1/2-1/2-1
- #60 HARMONIC-MAJOR 
Major 6-
1-1-1/2 -1- 1/2-1 1/2-1/2
- #61 HINDUSTAN 
Major 6- 7-
1-1-1/2 -1- 1/2-1-1
- #62 MIXOLYDIAN 
Major 7-
1-1-1/2 -1- 1-1/2-1

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

- #63 NEGRO-SPIRITUAL (comb. #1 & #62) ...
Major [7-/7]
1-1- $\frac{1}{2}$ -1- [1-1- $\frac{1}{2}$, 1- $\frac{1}{2}$ -1]

6-TONE SCALES:

- #64 APPALACHIAN (comb. #92 & #--)
Major [2-/2] 3- 6omit 7-
[1- $\frac{1}{2}$ -1 / $\frac{1}{2}$ -1-1] - 1-1 $\frac{1}{2}$ -1

- #65 AFRICAN
Major 2omit 3-
1 $\frac{1}{2}$ -1-1 - 1-1- $\frac{1}{2}$

- #66 BLUES
Major 2omit 3- 4 4+ 6omit 7-
1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1

- #67 VILASAKHANI (Hindu)
Major 2- 3- 4+ 5omit 6-
 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$

- #68 LOCRIAN 6-TONE
Major 2- 3- 4omit 5- 6- 7-
 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-1-1

- #69 HIDSHAF (Arabic)
Major 2- 3- 4omit 5- 7-
 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1


- #70 GURJARI (Hindu)
Major 2- 3- 5omit 6-
 $\frac{1}{2}$ -1-1 - 1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$

- #71 ABUSELIK (Arabic)
Major 2- 3omit 5- 6- 7-
 $\frac{1}{2}$ -2- $\frac{1}{2}$ - 1-1-1


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All Scales in Numerical Order with Staff (cont'd)

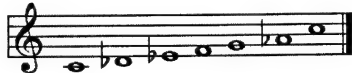
#72 PHRYGIAN 6-TONE
Major 2- 3- 5omit 6- 7-
 $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1-1



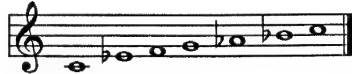
#73 IN SCALE (Japan)
Major 2- 3omit 6- 7-
 $\frac{1}{2}$ -2-1 - $\frac{1}{2}$ -1-1



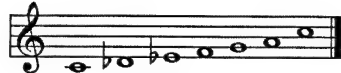
#74 SAMANTA (Hindu)
Major 2- 3- 6- 7omit
 $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -2



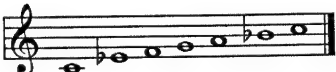
#75 IRISH
Major 2omit 3- 6- 7-
 $1\frac{1}{2}$ -1-1 - $\frac{1}{2}$ -1-1




#76 AFRICAN
Major 2- 3- 7omit
 $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1- $\frac{1}{2}$




#77 DORIAN 6-TONE
Major 2omit 3- 7-
 $1\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1



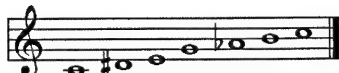
#78 PANCHANA (Hindu)
Major 2- 4+ 5omit
 $\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ -1- $\frac{1}{2}$



#79 PROMETHEUS-NEAPOLITAN
Major 2- 4+ 5omit 7-
 $\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ - $\frac{1}{2}$ -1




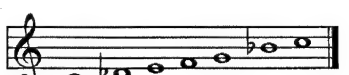
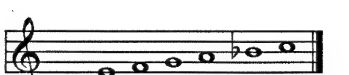
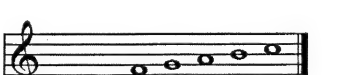
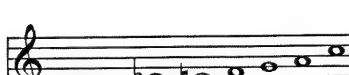
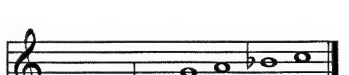
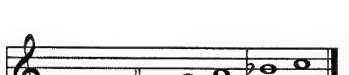


#80 AUGMENTED
Major 2+ 4omit 6-
 $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$



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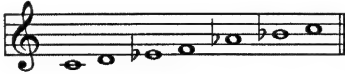
All Scales in Numerical Order with Staff (cont'd)

- #81 COMBINED-ALTERED (Hindu) 
- #82 6-TONE SYMMETRICAL 
- #83 BANGALA (Hindu) 
- #84 GREEK 
- #85 POLISH 
- #86 IONIAN 6-TONE 
- #87 APPALACHIAN (comb. #94 & #103) 
- #88 AKEBONO (Japan) 
- #89 OVERTONE 6-TONE 

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

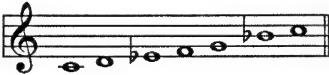
#90 AEOLIAN 6-TONE (Appalachian)
Major 3- 5omit 6- 7-
1-½-1 - 1½-1-1




#91 ARMENIAN, ANCIENT CHURCH
Major 3omit 6-
1-1½-1 - ½-1½-½




#92 GREEK
Major 3- 6omit 7-
1-½-1 - 1-1½-1




#93 GLINKA'S SCALE
Major 3- 6- 7omit
1-½-1 - 1-½-2




#94 HUNGARIAN
Major 3- 7omit
1-½-1 - 1-1-1½




#95 APPALACHIAN
Major 3omit 7-
1-1½-1 - 1-½-1




#96 SCOTCH
Major 4omit
1-1-1½ - 1-1-½



#97 WHOLE TONE
Major 4+ 5+ 6+ 7omit
1-1-1 - 1-1-1




#98 PROMETHEUS
Major 4+ 5omit 7-
1-1-1 - 1½-½-1




(cont'd)

All Scales in Numerical Order with Staff (cont'd)

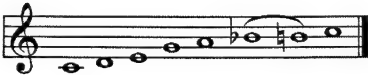
#99 LYDIAN 6-TONE
Major 4+ 7omit
1-1-1 - $\frac{1}{2}$ -1-1 $\frac{1}{2}$




#100 SCOTCH
Major 4omit 7-
1-1-1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1




#101 APPALACHIAN (comb. #96 & #100) ...
Major 4omit [7-/7]
1-1-1 $\frac{1}{2}$ - [1-1- $\frac{1}{2}$ / 1- $\frac{1}{2}$ -1]



#102 MIXOLYDIAN 6-TONE
Major 6 omit 7-
1-1- $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ -1

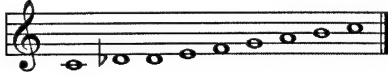


#103 GUIDO'S SCALE
Major 7 omit
1-1- $\frac{1}{2}$ - 1-1-1 $\frac{1}{2}$

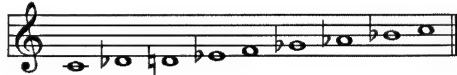


8-TONE SCALES:

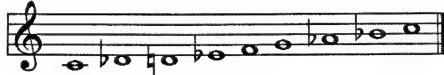
#104 HINDU
Major 2- 2
 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$



#105 LOCRIAN 8-TONE #1
Major 2- 2 3- 5- 6- 7-
 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1-1-1



#106 PHRYGIAN 8-TONE #1
Major 2- 2 3- 6- 7-
 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1





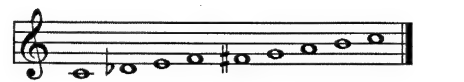

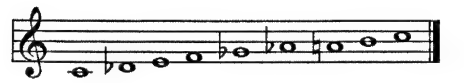




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All Scales in Numerical Order with Staff (cont'd)

- #107 HINDU
Major 2- 2 4+
 $\frac{1}{2}$ - $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - 1-1- $\frac{1}{2}$
- #108 PORTUGUESE
Major 2 2+ 4+ 8+
1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1-1-1
- #109 DIMINISHED #2
Major 2- 3- 3 4+ 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1
- #110 ESPLA'S SCALE
Major 2- 3- 3 5- 6- 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1
- #111 SPANISH 8-TONE
Major 2- 3- 3 6- 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
- #112 LATIN-AMERICAN
Major 2- 3- 3 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1
- #113 COMPOSITE #1
Major 2- 3- 4- 5- 5 6- 7-
 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
- #114 LOCRIAN 8-TONE #2
Major 2- 3- 5- 5 6- 7-
 $\frac{1}{2}$ -1-1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
- #115 ZIRAFKAND (Arabic)
Major 2- 3- 5- 6- 6
 $\frac{1}{2}$ -1-1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

- #116 'IRAQ (Arabic) 
- Major 2- 3- 5- 6- 7- 7
 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1- $1\frac{1}{2}$ - $\frac{1}{2}$
- #117 PHRYGIAN 8-TONE #2 
- Major 2- 3- 6- 6 7-
 $\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
- #118 BUZURG (Arabic) 
- Major 2- 4 4+
 $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$
- #119 SCOTCH BAGPIPE TUNING 
- Major 2- 4+ 9
 $\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$ -1
- #120 IRAK 
- Major 2- 5- 6- 6
 $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
- #121 JOBIM'S SCALE 
- Major 3- 3 4+ 7-
 $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $1\frac{1}{2}$ -1
- #122 AEOLIAN 8-TONE #1 
- Major 3- 3 6- 7-
 $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
- #123 DORIAN 8-TONE #1 
- Major 3- 3 7-
 $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $1\frac{1}{2}$ -1
- #124 CONWAY'S 8-TONE 
- Major 3- 4 4+ [6-/6]
 $1\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ - [1-1- $\frac{1}{2}$ / $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$]

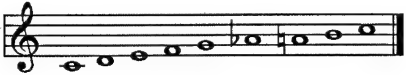
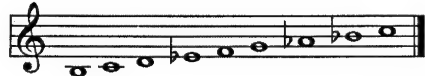
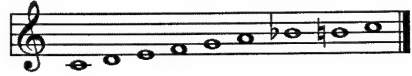
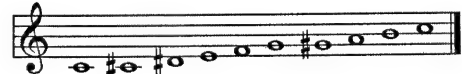
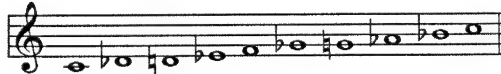


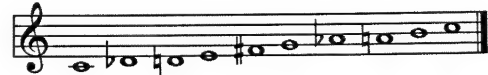

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All Scales in Numerical Order with Staff (cont'd)

- #125 DIMINISHED #1
Major 3- 5- 6- 6
1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
- #126 COMPOSITE #2
Major 3- 5- 6- 6 7-
1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
- #127 ARABIC
Major 3- 6- 6
1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
- #128 AEOLIAN 8-TONE #2
Major 3- 6- 6 7-
1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
- #129 ISFAHAN (Arabic)
Major 3- 6- 7- 7
1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$
- #130 DORIAN 8-TONE #2
Major 3- 7- 7
1- $\frac{1}{2}$ -1 -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
- #131 RYO 8-TONE (Japan)
Major 4 4+
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$
- #132 HINDU
Major 4+ 6- 6
1-1-1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
- #133 HINDU
Major 5- 5 7-
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

(cont'd)

All Scales in Numerical Order with Staff (cont'd)

- #134 BOP SCALE 
Major 6- 6
1-1-½ -1-½- ½-1-½
- #135 MAGON ABOT (Jewish) 
Major low 7, 3- 6- 7-
½- 1-½-1 -1- ½-1-1
- #136 MIXOLYDIAN 8-TONE 
Major 7- 7
1-1-½ -1-1- ½-½-½
- 9-TONE SCALES:**
- #137 TCHEREPNIN'S SCALE 
Major 1 1+ 2+ 5 5+
½-1-½ - ½-1-½ - ½-1-½
- #138 LOCRIAN 9-TONE 
Major 2- 2 3- 5- 5 6- 7-
½-½-½ - 1-½-½ - ½-1-1
- #139 PHRYGIAN 9-TONE 
Major 2- 2 3- 6- 6 7-
½-½-½ - 1-1-½ - ½-½-1
- #140 HINDU 
Major 2- 2 4 4+
½-½-1 - ½-½-½ - 1-1-½
- #141 HINDU 
Major 2- 2 4+ 6- 6
½-½-1 - 1-½-½ - ½-1-½
- #142 AUXILIARY BLUES 
Major 3- 3 4 4+ 7-
1-½-½ - ½-½-½ - 1-½-1

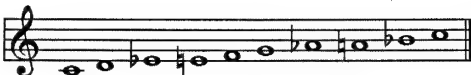
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All Scales in Numerical Order with Staff (cont'd)

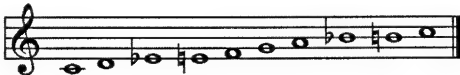
#143 BARTOK'S 9-TONE
Major 3- 3 5- 5
 $1-\frac{1}{2}-\frac{1}{2} - \frac{1}{2}-\frac{1}{2}-\frac{1}{2} - 1-1-\frac{1}{2}$



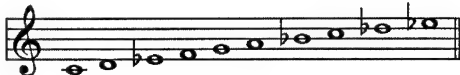
#144 AEOLIAN 9-TONE
Major 3- 3 6- 6 7-
 $1-\frac{1}{2}-\frac{1}{2} - \frac{1}{2}-1-\frac{1}{2} - \frac{1}{2}-\frac{1}{2}-1$




#145 DORIAN 9-TONE
Major 3- 3 7- 7
 $1-\frac{1}{2}-\frac{1}{2} - \frac{1}{2}-1-1 - \frac{1}{2}-\frac{1}{2}-\frac{1}{2}$



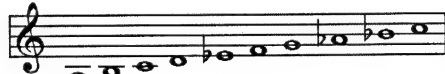
#146 ARMENIAN, ANCIENT CHURCH
Major 3- 7- 9- 10-
 $1-\frac{1}{2}-1 -1- 1-\frac{1}{2}-1 - \frac{1}{2}-1$




#147 RYO 9-TONE (Japan)
Major 4 4+ 7- 7
 $1-1-\frac{1}{2} - \frac{1}{2}-\frac{1}{2}-1 - \frac{1}{2}-\frac{1}{2}-\frac{1}{2}$



#148 TUDOR SCALE
Major low 6 7, 3- 6- 7-
 $1-\frac{1}{2} - 1-\frac{1}{2}-1 -1- \frac{1}{2}-1-1$

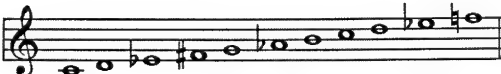


#149 ADONAI MALAKH (Jewish)
Major low 6 7, high 7-
 $1-\frac{1}{2} - 1-1-\frac{1}{2} -1- 1-\frac{1}{2}-1$

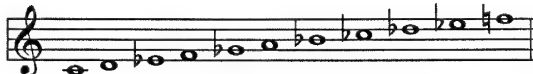


10-TONE SCALES:

#150 ALGERIAN
Major 3- 4+ 6- 9 10- 11
 $1-\frac{1}{2}-1-\frac{1}{2} -\frac{1}{2}- \frac{1}{2}-1-\frac{1}{2}-\frac{1}{2} - 1-\frac{1}{2}-1$




#151 ARMENIAN, ANCIENT CHURCH
Major 3- 5- 7- 8- 9- 10- 11
 $1-\frac{1}{2}-1 -\frac{1}{2}- 1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2} - 1-1-1$




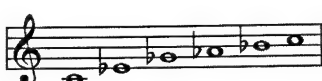
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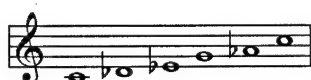
All Scales in Numerical Order with Staff (cont'd)


#152 RUSSIAN LITURGICAL 
Major 7- 9 10- 11
1-1-½ -1- 1-½-1 - 1-½-1


5-TONE SCALES:


#153 SEMITONAL PENTATONIC #4 
Major 2- 3- 4+ 5omit 6- 7omit
½-1-1½ - 1-2


#154 JAPANESE 
Major 2omit 3- 4omit 5- 6- 7-
1½-1½-1 - 1-1

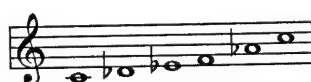
#155 PELOG #1 
Major 2- 3- 4omit 6- 7omit
½-1-2 - ½-2

#156 PELOG #4 
Major 2- 3omit 5- 6- 7omit
½-2-½ - 1-2

#157 HIRAJOSHI #2 
Major 2- 3omit 5- 6omit 7-
½-2-½ - 2-1

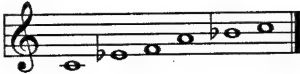
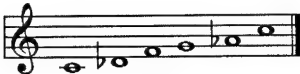


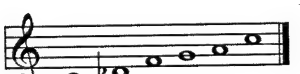
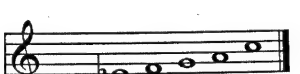
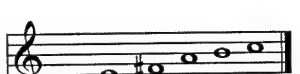

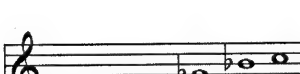
#158 PENTATONIC #5 
Major 2omit 3- 5omit 6- 7-
1½-1-1½ - 1-1

#159 KUMOI #5 
Major 2omit 3- 5- 6omit 7-
1½-1-½ - 2-1

#160 JAVANESE 
Major 2- 3- 5omit 6- 7omit
½-1-1 - 1½-2








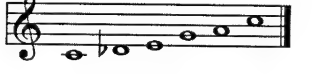
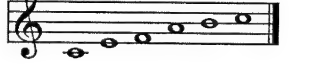
(cont'd)

All Scales in Numerical Order with Staff (cont'd)

-
- #161 SEMITONAL PENTATONIC #1 
- Major 2omit 3- 5omit 7-
1½-1-2 - ½-1
- #162 HIRAJOSHI #4 
- Major 2- 3omit 6- 7omit
½-2-1 - ½-2
- #163 KUMOI #2 
- Major 2- 3omit 6omit 7-
½-2-1 - 1½-1
- #164 PENTATONIC #2 
- Major 2omit 3- 6omit 7-
1½-1-1 - 1½-1
- #165 JAPANESE PENTATONIC #4 
- Major 2- 3omit 7omit
½-2-1 - 1-1½
- #166 JAZZ MINOR PENTATONIC 
- Major 2omit 3- 7omit
1½-1-1 - 1-1½
- #167 KUMOI #3 
- Major 2omit 4+ 5omit
2-1-1½ - 1-½
- #168 JAPANESE PENTATONIC #5 
- Major 2omit 4+ 5+ 6omit
2-1-1 - 1½-½
- #169 DIMINISHED PENTATONIC 
- Major 2+ 4omit 5- 6omit 7-
1½-½-1 - 2-1
-

(cont'd)

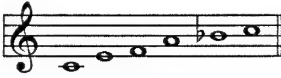
All Scales in Numerical Order with Staff (cont'd)

-
- #170 JAZZ DOMINANT PENTATONIC 
Major 2- 4omit 5- 6omit 7-
 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - 2-1
- #171 JAPANESE PENTATONIC #3 
Major 2+ 4omit 5+ 6+ 7omit
 $1\frac{1}{2}$ - $\frac{1}{2}$ -2 - 1-1
- #172 VIBHASA (Hindu) 
Major 2- 4+ 5omit 7omit
 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - 1 $\frac{1}{2}$ -1 $\frac{1}{2}$
- #173 HIRAJOSHI #5 
Major 2omit 4+ 6omit
2-1- $\frac{1}{2}$ - 2- $\frac{1}{2}$
- #174 PENTATONIC-DOMINANT 
Major 2+ 4omit 6omit 7-
 $1\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1
- #175 REWA (Hindu) 
Major 2- 4omit 6- 7omit
 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -2
- #176 DOMINANT PENTATONIC 
Major 2- 4omit 6omit 7-
 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1
- #177 SCRIABIN'S SCALE 
Major 2- 4omit 7omit
 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$
- #178 HIRAJOSHI #3 
Major 2omit 5omit
2- $\frac{1}{2}$ -2 - 1- $\frac{1}{2}$
-


(cont'd)

All Scales in Numerical Order with Staff (cont'd)

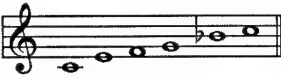
#179 PELOG #3
Major 2omit 5omit 7-
2- $\frac{1}{2}$ -2 - $\frac{1}{2}$ -1




#180 PELOG #5
Major 2omit 6omit
2- $\frac{1}{2}$ -1 - 2- $\frac{1}{2}$




#181 SEMITONAL PENTATONIC #3
Major 2omit 6omit 7-
2- $\frac{1}{2}$ -1 - 1- $\frac{1}{2}$ -1



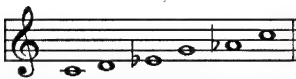
#182 BULGARIAN
Major 2omit 7omit
2- $\frac{1}{2}$ -1 - 1-1 $\frac{1}{2}$




#183 PELOG #2
Major 3omit 4+ 6omit
1-2- $\frac{1}{2}$ - 2- $\frac{1}{2}$




#184 HIRAJOSHI #1
Major 3- 4omit 6- 7omit
1- $\frac{1}{2}$ -2 - $\frac{1}{2}$ -2




#185 AFRICAN
Major 3- 4omit 6omit 7-
1- $\frac{1}{2}$ -2 - 1- $\frac{1}{2}$ -1



#186 KUMOI #1
Major 3- 4omit 7omit
1- $\frac{1}{2}$ -2 - 1-1 $\frac{1}{2}$

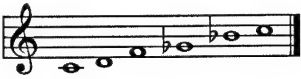
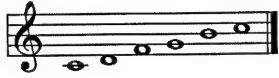
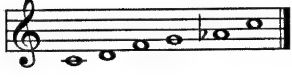
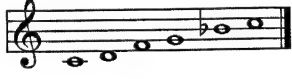
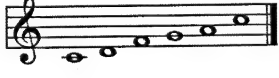
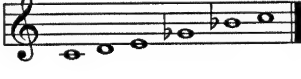
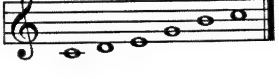
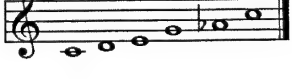
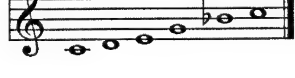


#187 SEMITONAL PENTATONIC #2
Major 3omit 4+ 7omit
1-2- $\frac{1}{2}$ - 1-1 $\frac{1}{2}$



(cont'd)

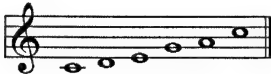
All Scales in Numerical Order with Staff (cont'd)

-
- #188 JAPANESE PENTATONIC #2 
Major 3omit 5- 6omit 7-
1-1½-½ - 2-1
- #189 SEMITONAL PENTATONIC #5 
Major 3omit 6omit
1-1½-1 - 2-½
- #190 KUMOI #4 
Major 3omit 6- 7omit
1-1½-1 - ½-2
- #191 PENTATONIC #4 
Major 3omit 6omit 7-
1-1½-1 - 1½-1
- #192 PENTATONIC #1 
Major 3omit 7omit
1-1½-1 - 1-1½
- #193 JAZZ PENTATONIC 
Major 4omit 5- 6omit 7-
1-1-1 - 2-1
- #194 INDIA 
Major 4omit 6omit
1-1-1½ - 2-½
- #195 JAPANESE PENTATONIC #1 
Major 4omit 6- 7omit
1-1-1½ - ½-2
- #196 AFRICAN 
Major 4omit 6omit 7-
1-1-1½ - 1½-1
-


(cont'd)

All Scales in Numerical Order with Staff (cont'd)

#197 PENTATONIC #3
Major 4omit 7omit
1-1-1½ - 1-1½



#198 AFRICAN
Major 5omit 7omit
1-1-½ - 2-1½

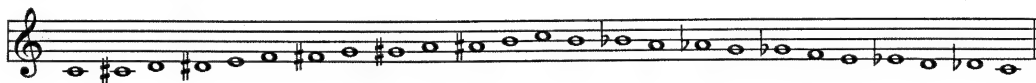


WESTERN CHROMATIC SCALES:

#199 Chromatic Harmonic (Western):



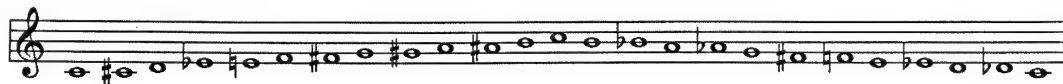
#200 Chromatic Melodic (Western):



#201 Chromatic Melodic Major:



#202 Chromatic Melodic Minor:



End of Chart #10

CHAPTER 6

ALL SCALES OF THIS BOOK IN NUMERICAL ORDER (Scales #1 - #198)

(With a SYMBOL)

CONTENTS OF CHAPTER 6:

Order of Scales in Chart #12	Page 71
Chart #12: All Scales of This Book in Numerical Order (with SYMBOL)	72

ORDER OF SCALES ON CHART #12:

7-Tone Scales	(#1 - #63)	.....	Page 72
6-Tone Scales	(#64 - #103)	.....	74
8-Tone Scales	(#104 - #136)	.....	76
9-Tone Scales	(#137 - #149)	.....	77
10-Tone Scales	(#150 - #152)	.....	78
5-Tone Scales	(#153 - #198)	.....	78

NOTE: Remember, Symbols of non-7-Tone Scales may vary, so if you can't find your scale on this chart, go on to "Alternate Symbols", Chart #13 (page 85) or, better yet, to Chart #14 or #15 (pages 102 or 113) where scales are shown by intervals and tetrachords, respectively.

NOTE: Also, remember that the SYMBOL shows how each scale differs from the Major Scale (which Scale Point Tones are raised, lowered, or omitted from the Major Scale to make the non-Major Scale).

NOTE: Don't forget that the Scale Number can be used to look up that scale in The Grand Finale (starting on page 405) for more information.

NOTE: "om" means "omit".

This following chart is nothing more than just the scales of this book listed in their numerical order (that I made) plus a "SYMBOL". This SYMBOL shows how each scale differs from our Major Scale (which is Scale #1). The Symbols consist of the word "Major" and then the scale point tones that differ from the Major Scale. This is more thoroughly explained earlier on page 8.

The Symbols in this chart are "stretched out" over their lines in order to show more easily the different variations from the Major Scale.

ALL SCALES IN NUMERICAL ORDER (#1 - #198) (with SYMBOL)

CHART #12

#	NAME	SYMBOL
7-TONE SCALES		
*1	Major	Major
---2---		
2	Ananda (Hindu)	Major 2-
3	Chromatic Mixolydian, Asc.(Anct Grk)	Major 2- 2 3+ 4+ 6+ 7omit
4	Chromatic Dorian, Asc.(Anct Grk)	Major 2- 2 3omit 6- 6 7om
5	Jewish (combines #32 & #62)	Major [2/2+] 7-
6	Neapolitan-Major	Major 2- 3-
7	Polish (combines #15 & #31)	Major 2- [3-/3] 6- 7-
8	Super-Locrian	Major 2- 3- 4- 5- 6- 7-
9	Chrm. Hyopophrygian, Asc.(Anct Grk)	Major 2+ 3+ 4+ 6+
10	Raga Todi (Hindu)	Major 2- 3- 4+ 6-
11	Byzantine	Major 2- 3- 4- 6- 7-
12	Locrian	Major 2- 3- 5- 6- 7-
13	Hijazi (Arabic)	Major 2- 3- 5- 7-
14	Neapolitan-minor	Major 2- 3- 6-
15	Phrygian	Major 2- 3- 6- 7-
16	Javanese	Major 2- 3- 7-
17	Marava (Hindu)	Major 2- 4+
18	Blues	Major 2+ 4 4+ 6om 7-

*Use Scale Numbers to look up scales
in The Grand Finale, starting on page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
*19	Enigmatic (Ascending) (Verdi) . . .	Major 2- 4+ 5+ 6+
20	Chrm. Hypolydian, Asc.(Anct Grk) .	Major 2- 4+ 6-
21	India	Major 2- 4+ 7-
22	Hungarian-Major	Major 2+ 4+ 7-
23	Chrm Lydian, Asc. (Anct.Greek) . .	Major 2- 5-
24	Enigmatic, Descending-Inverted . .	Major 2- 5+ 6+
25	Chrm. Phrygian, Asc.(Anct.Grks.) . .	Major 2+ 5+ 6+
26	Persian	Major 2- 5- 6-
27	Rahawi (Arabic)	Major 2- 5- 6- 7-
28	Oriental	Major 2- 5- 7-
29	Persian	Major 2+ 5+ 7-
30	Double Harmonic	Major 2- 6-
31	Spanish	Major 2- 6- 7-
32	Roumanian-Major	Major 2+ 7-
33	Arabic	Major 2- 7-
---3---		
34	Melodic minor	Major 3-
35	Arezzo Italy) (comb. #1 & #34) . .	Major [3-/3]
36	Basque (combines #50 & 62) . . .	Major [3-/3] 7-
37	Lydian-Diminished	Major 3- 4+
38	Conway's 7-Tone	Major 3- 4 4+ 6omit
39	Turkish (combines #44 & #50) . . .	Major 3- [4/4+] 7-
40	Hungarian-minor	Major 3- 4+ 6-
41	Chrm. Hypodorian, Asc.(Anct Grk) .	Major 3- 4- 6- 6 7omit
42	Greek	Major 3- 4+ 6- 7-
43	Greek	Major 3- 4- 6- 7-
44	Roumanian-minor	Major 3- 4+ 7-
45	Half-Diminished	Major 3- 5- 6- 7-
46	Zangula (Arabic)	Major 3- 5- 7-
47	Harmonic-minor	Major 3- 6-
48	Ptolemy's Mixed Hypodorian	Major 3- 6- 6 7omit
49	Natural minor	Major 3- 6- 7-
50	Dorian	Major 3- 7-
---4---		
51	Lydian	Major 4+
52	Lydian-Augmented	Major 4+ 5+
53	Leading Whole-Tone	Major 4+ 5+ 6+
54	Lydian-minor	Major 4+ 6- 7-
55	Overtone	Major 4+ 7-

*Use Scale Number to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
---5---		
*56	Ionian-Augmented	Major 5+
57	Locrian-Major	Major 5- 6- 7-
58	Zenkla (Arabic)	Major 5- 7-
59	Rummel-Meia (Arabic)	Major 5+ 7-
---6---		
60	Harmonic-Major	Major 6-
61	Hindustan	Major 6- 7-
---7---		
62	Mixolydian	Major 7-
63	Negro-Spiritual (comb #1 & #62) . .	Major [7-/7]
6-TONE SCALES		
---2---		
64	Appalachian (comb. #92 & #--) . . .	Major [2-/2] 3- 6omit 7-
65	African	Major 2omit 3-
66	Blues	Major 2om 3- 4 4+ 6om 7-
67	Vilasakhani (Hindu)	Major 2- 3- 4+ 5om 6-
68	Locrian 6-Tone	Major 2- 3- 4om 5- 6- 7-
69	Hidshaf (Arabic)	Major 2- 3- 4om 5- 7-
70	Gurjari (Hindu)	Major 2- 3- 5om 6-
71	Abuselik (Arabic)	Major 2- 3om 5- 6- 7-
72	Phrygian 6-Tone	Major 2- 3- 5om 6- 7-
73	In Scale (Japan)	Major 2- 3omit 6- 7-
74	Samanta (Hindu)	Major 2- 3- 6- 7om
75	Irish	Major 2om 3- 6- 7-
76	African	Major 2- 3- 7om
77	Dorian 6-Tone	Major 2om 3- 7-
78	Panchana (Hindu)	Major 2- 4+ 5om
79	Prometheus-Neapolitan	Major 2- 4+ 5om 7-
80	Augmented	Major 2+ 4om 6-
81	Combined-Altered (Hindu)	Major 2- 4+ 6- 7om
82	6-Tone Symmetrical	Major 2- 5+ 7om
83	Bangala (Hindu)	Major 2- 6- 7om
84	Greek	Major 2- 6om 7-
85	Polish	Major 2omit 7-

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405 (cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
---3---		
*86	Ionian 6-Tone	Major 3omit
87	Appalachian (comb. #94 & #103) . .	Major [3-/3] 7omit
88	Akebono (Japan)	Major 3- 4om 7-
89	Overtone 6-Tone	Major 3om 4+ 7-
90	Aeolian 6-Tone (Appalachian) . . .	Major 3- 5om 6- 7-
91	Armenian, Ancient Church	Major 3omit 6-
92	Greek	Major 3- 6om 7-
93	Glinka's Scale	Major 3- 6- 7om
94	Hungarian	Major 3- 7om
95	Appalachian	Major 3omit 7-
---4---		
96	Scotch	Major 4omit
97	Whole Tone	Major 4+ 5+ 6+ 7omit
98	Prometheus	Major 4+ 5om 7-
99	Lydian 6-Tone	Major 4+ 7om
100	Scotch	Major 4omit 7-
101	Appalachian (comb. #96 & #100) . .	Major 4omit [7-/7]
---6---		
102	Mixolydian 6-Tone	Major 6 omit 7-
---7---		
103	Guido's Scale	Major 7 omit
8-TONE SCALES		
---2---		
104	Hindu	Major 2- 2
105	Locrian 8-Tone #1	Major 2- 2 3- 5- 6- 7-
106	Phrygian 8-Tone #1	Major 2- 2 3- 6- 7-
107	Hindu	Major 2- 2 4+
108	Portuguese	Major 2 2+ 4+ 8+
109	Diminished #2	Major 2- 3- 3 4+ 7-
110	Espla's Scale	Major 2- 3- 3 5- 6- 7-
111	Spanish 8-Tone	Major 2- 3- 3 6- 7-

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
*112	Latin-American	Major 2- 3- 3 7-
113	Composite #1	Major 2- 3- 4- 5- 5 6- 7-
114	Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-
115	Zirafkand (Arabic)	Major 2- 3- 5- 6- 6
116	'Iraq (Arabic)	Major 2- 3- 5- 6- 7- 7
117	Phrygian 8-Tone #2	Major 2- 3- 6- 6 7-
118	Buzurg (Arabic)	Major 2- 4 4+
119	Scotch Bagpipe tuning	Major 2- 4+ 9
120	Irak	Major 2- 5- 6- 6
---3---		
121	Jobim's	Major 3- 3 4+ 7-
122	Aeolian 8-Tone #1	Major 3- 3 6- 7-
123	Dorian 8-Tone #1	Major 3- 3 7-
124	Conway's 8-Tone	Major 3- 4 4+ [6-/6]
125	Diminished #1	Major 3- 5- 6- 6
126	Composite #2	Major 3- 5- 6- 6 7-
127	Arabic	Major 3- 6- 6
128	Aeolian 8-Tone #2	Major 3- 6- 6 7-
129	Isfahan (Arabic)	Major 3- 6- 7- 7
130	Dorian 8-Tone #2	Major 3- 7- 7
---4---		
131	Ryo 8-Tone (Japan)	Major 4 4+
132	Hindu	Major 4+ 6- 6
---5---		
133	Hindu	Major 5- 5 7-
---6---		
134	Bop Scale	Major 6- 6
---7---		
135	Magon Abot (Jewish)	Major low 7, 3- 6- 7-
136	Mixolydian 8-Tone	Major 7- 7

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
9-TONE SCALES		
---1---		
*137	Tcherepnin	Major 1 1+ 2+ 5 5+
---2---		
138	Locrian 9-Tone	Major 2- 2 3- 5- 5 6- 7-
139	Phrygian 9-Tone	Major 2- 2 3- 6- 6 7-
140	Hindu	Major 2- 2 4 4+
141	Hindu	Major 2- 2 4+ 6- 6
---3---		
142	Auxiliary Blues	Major 3- 3 4 4+ 7-
143	Bartok's 9-Tone	Major 3- 3 5- 5
144	Aeolian 9-Tone	Major 3- 3 6- 6 7-
145	Dorian 9-Tone	Major 3- 3 7- 7
146	Armenian, Ancient Church	Major 3- 7- 9- 10-
---4---		
147	Ryo 9-Tone (Japan)	Major 4 4+ 7- 7
---6---		
148	Tudor Scale	Major low 6 7, 3- 6- 7-
149	Adonai Malakh (Jewish)	Major low 6 7, high 7-
10-TONE SCALES		
150	Algerian	Major 3- 4+ 6- 9 10- 11
151	Armenian, Ancient Church	Major 3- 5- 7- 8- 9- 10- 11
152	Russian liturgical	Major 7- 9 10- 11
5-TONE SCALES		
---2---		
153	Semitonal Pentatonic #4	Major 2- 3- 4+ 5om 6- 7om
154	Japanese	Major 2om 3- 4om 5- 6- 7-

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
*155	Pelog #1	Major 2- 3- 4om 6- 7om
156	Pelog #4	Major 2- 3om 5- 6- 7om
157	Hirajoshi #2	Major 2- 3om 5- 6om 7-
158	Pentatonic #5	Major 2om 3- 5om 6- 7-
159	Kumoi #5	Major 2om 3- 5- 6om 7-
160	Javanese	Major 2- 3- 5om 6- 7om
161	Semitonal Pentatonic #1	Major 2om 3- 5om 7-
162	Hirajoshi #4	Major 2- 3om 6- 7om
163	Kumoi #2	Major 2- 3om 6om 7-
164	Pentatonic #2	Major 2om 3- 6om 7-
165	Japanese Pentatonic #4	Major 2- 3om 7om
166	Jazz minor Pentatonic	Major 2om 3- 7om
167	Kumoi #3	Major 2om 4+ 5om
168	Japanese Pentatonic #5	Major 2om 4+ 5+ 6om
169	Diminished Pentatonic	Major 2+ 4om 5- 6om 7-
170	Jazz Dominant Pentatonic	Major 2- 4om 5- 6om 7-
171	Japanese Pentatonic #3	Major 2+ 4om 5+ 6+ 7om
172	Vibhasa (Hindu)	Major 2- 4+ 5om 7om
173	Hirajoshi #5	Major 2om 4+ 6om
174	Pentatonic-Dominant	Major 2+ 4om 6om 7-
175	Rewa (Hindu)	Major 2- 4om 6- 7om
176	Dominant Pentatonic	Major 2- 4om 6om 7-
177	Scriabin	Major 2- 4om 7om
178	Hirajoshi #3	Major 2om 5om
179	Pelog #3	Major 2om 5om 7-
180	Pelog #5	Major 2om 6om
181	Semitonal Pentatonic #3	Major 2om 6om 7-
182	Bulgarian	Major 2om 7om

---3---

183	Pelog #2	Major 3om 4+ 6om
184	Hirajoshi #1	Major 3- 4om 6- 7om
185	African	Major 3- 4om 6om 7-
186	Kumoi #1	Major 3- 4om 7om
187	Semitonal Pentatonic #2	Major 3om 4+ 7om
188	Japanese Pentatonic #2	Major 3om 5- 6om 7-
189	Semitonal Pentatonic #5	Major 3om 6om
190	Kumoi #4	Major 3om 6- 7om
191	Pentatonic #4	Major 3om 6om 7-
192	Pentatonic #1	Major 3om 7om

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

(cont'd)

Chart #12: Numerical Order (with Symbol) (cont'd)

#	NAME	SYMBOL
---4---		
193	Jazz Pentatonic	Major 4om 5- 6om 7-
194	India	Major 4om 6om
195	Japanese Pentatonic #1	Major 4om 6- 7om
196	African	Major 4om 6om 7-
197	Pentatonic #3	Major 4om 7om
---5---		
198	African	Major 5omit 7omit

*Use to locate scales in The Grand Finale, starting on page 405

End of Chart #12

CHAPTER 7

SCALES BY SYMBOLS & ALTERNATE SYMBOLS

CONTENTS OF CHAPTER 7:

A Few Words About Symbols & Alternate Symbols	Page 83
Order of 1st Tone Alterations	84
Chart #13: Scales by Symbols & Alternate Symbols	85

A FEW WORDS ABOUT SYMBOLS & ALTERNATE SYMBOLS

The Symbol shows how a scale differs from the Major Scale. Sometimes there is no question about what the Symbol is -- #62 Mixolydian, for instance, is just like the Major scale except that the 7th Scale Point Tone is lowered a half step. The only Symbol possible for the Mixolydian Scale is "Major 7-". However, the Symbols aren't so clear in some other scales, especially the non-7-Tone Scales. Let's take for example, #130 Dorian 8-Tone #2. There are two possible Symbols: Is it Major 3- 6 6+, or is it Major 3- 7- 7? Both Symbols involve the same intervals. I found the scale in a "Source" as Major 3- 7- 7, but you can see how the other Symbol could be used just as easily.

For this reason I have tried to figure out as many Symbols for each scale as possible. These are listed in this following chart, Chart #13, and are also listed after each individual scale in The Grand Finale, which starts on page 405. I must be honest, though. Sometimes I just got tired of changing "2- 2" to "1 1+" or "6- 6" to "5 5+". In fact, sometimes it almost seemed silly the extent to which one could go with that type of thing. Therefore, in The Grand Finale, I didn't put as many alternate Symbols as might have been done. So if you find some that have been omitted, just add them to your own copy of this book and realize that sometimes that sort of thing can go on endlessly.

ORDER OF 1ST TONE ALTERATION

Major 1 (1 1+)	Page 85
Major 2 omit	85
Major 2 (2-; 2+; 2 2+; 2- 2)	86
Major 3 omit	89
Major 3 (3-; 3- 3)	90
Major 4 omit	92
Major 4 (4+; 4 4+)	93
Major 5 omit	93
Major 5 (5-; 5+; 5- 5)	94
Major 6 omit	94
Major 6 (6-; 6+; 6- 6; 6 6+; low 6)	95
Major 7 omit	95
Major 7 (7-; 7- 7; low 7)	95

NOTE: The SYMBOL shows how a scale differs from the Major Scale.

NOTE: Remember, symbols may vary as they do in this chart. So if you can't find your scale here, go on to Charts #14 and #15 (starting on pages 102 and 113) where the scales are shown by intervals and tetrachords respectively. Intervals and tetrachords are *unchangeable* within a scale and, therefore, utterly reliable.

NOTE: The Scale Number can be used to look up an individual scale in The Grand Finale (starting on page 405) for additional information on that particular scale.

NOTE: The Symbols are "stretched out" on the line in order to show the variations better.

NOTE: Remember that "om" = "omit that particular tone".

SCALES BY SYMBOLS & ALTERNATE SYMBOLS IN ORDER OF NUMERICAL ALTERATIONS

CHART #13

SYMBOL	#	NAME	MAJOR
Major	*# 1	Major	7
---1---			
Major 1 1+	104	Hindu	8
Major 1 1+ 2+ 4+ 7-	109	Diminished #2	8
Major 1 1+ 2om 4om 7om	177	Scriabin	5
Major 1 1+ 2+ 5 5+	137	Tcherepnin	9
Major 1 1+ 2+ 6- 6	137	Tcherepnin	9
Major 1 1+ 3- 4 4+ 6- 7-	138	Locrian 9-Tone	9
Major 1 1+ 3- 5- 5 6- 7-	138	Locrian 9-Tone	9
Major 1 1+ 3- 5 5+ 7-	139	Phrygian 9-Tone	9
Major 1 1+ 3- 5- 6- 7-	105	Locrian 8-Tone #1	8
Major 1 1+ 3- 6 6- 7	139	Phrygian 9-Tone	9
Major 1 1+ 3- 6- 7-	106	Phrygian 8-Tone #1	8
Major 1 1+ 4+	107	Hindu	8
Major 1 1+ 4 4+	140	Hindu	8
Major 1 1+ 4+ 5 5+	141	Hindu	9
Major 1 1+ 4+ 6- 6	141	Hindu	9
Major 1 1+ 5- 5	140	Hindu	9
---2 omit---			
Major 2omit 3-	65	African	6
Major 2omit 3- 6- 7-	75	Irish	6
Major 2omit 3- 7-	77	Dorian 6-Tone	6
Major 2omit 7-	85	Polish	6
Major 2omit 4omit 3- 3 6-	80	Augmented	6
Major 2omit 4omit 3- 5- 6- 7-	154	Japanese	5
Major 2omit 4omit 5-	167	Kumoi #3	5
Major 2omit 4omit 5- 6-	168	Japanese Pentatonic #5	5
Major 2omit 4omit 6omit 3- 3 5 5+	80	Augmented	6
Major 2omit 4omit 6omit 3- 3 5- 7-	169	Diminished Pentatonic	5
Major 2omit 4omit 6omit 3- 3 7-	174	Pentatonic-Dominant	5
Major 2omit 4omit 7omit 1 1	177	Scriabin	5
Major 2omit 5omit	178	Hirajoshi #3	5
Major 2omit 5omit 3- 4+ 6- 7-	154	Japanese	5
Major 2omit 5omit 3- 4- 6- 7-	171	Japanese Pentatonic #3	5

*Use Scale Numbers to look up scales in
The Grand Finale, starting on page 405

(cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol				#	Name	# of Tones
Major	2omit	5omit	3- 6- 7- . .	*#158	Pentatonic #5	5
Major	2omit	5omit	3- . . . 7- . .	161	Semitonal Pentatonic #1 . . .	5
Major	2omit	5omit	4	167	Kumoi #3	5
Major	2omit	5omit	4+ 6-	168	Japanese Pentatonic #5	5
Major	2omit	5omit	. . . . 7- . . .	179	Pelog #3	5
Major	2omit	6omit	. . . . .	180	Pelog #5	5
Major	2omit	6omit	3- 3 4 4+ 7- . .	18	Blues	7
Major	2omit	6omit	3- . . . 4 4+ 7- . .	66	Blues	6
Major	2omit	6omit	3- . . . 4- 5+ 7- . .	171	Japanese Pentatonic #3	5
Major	2omit	6omit	3- . . . 4- . . . 7- . .	174	Pentatonic-Dominant	5
Major	2omit	6omit	3- 5+ 7- . .	158	Pentatonic #5	5
Major	2omit	6omit	3- 5- 7- . .	159	Kumoi #5	5
Major	2omit	6omit	3- 5 5- 7- . .	66	Blues	6
Major	2omit	6omit	3- 7- . .	164	Pentatonic #2	5
Major	2omit	6omit	. . . . 4+	173	Hirajoshi #5	5
Major	2omit	6omit	. . . . 4+ 5+	168	Japanese Pentatonic #5	5
Major	2omit	6omit	. . . . . 7-	181	Semitonal Pentatonic #3	5
Major	2omit	7omit	. . . . .	182	Bulgarian	5
Major	2omit	7omit	3-	166	Jazz minor Pentatonic	5
Major	2omit	7omit	3- 4- 5+ 6+ . . .	171	Japanese Pentatonic #3	5
Major	2omit	7omit	3- 4 4+ . . . 6+ . . .	66	Blues	6
Major	2omit	7omit	3- . . . 5- 5 6+ . . .	66	Blues	6
Major	2omit	7omit	3- 5- 6+ . . .	159	Kumoi #5	5
Major	2omit	7omit	3- 5+ 6+ . . .	158	Pentatonic #5	5
Major	2omit	7omit	3- 6+ . . .	164	Pentatonic #2	5
Major	2omit	7omit	. . . . . 6+	181	Semitonal Pentatonic #3	5
---2---						
Major	2-	. . . . .	. . . . .	2	Ananda	7
Major	2-	2 . . . . .	. . . . .	104	Hindu	8
Major	2-	2 3- 4 4+ . . .	6- 7-	138	Locrian 9-Tone	9
Major	2	2+ 4+	7-	121	Jobim's	8
Major	2	2+ 4+ . . . . .	. . . . 8+ . . .	108	Portuguese	8
Major	2-	2 3- 4+ . . .	6+ 7om	3	Chromatic Mixolydian	7
Major	2-	2 3- 5- 5 . . .	6- 7-	138	Locrian 9-Tone	9
Major	2-	2 3- 5 5+ . . .	7-	139	Phrygian 9-Tone	9
Major	2-	2 3- 5- . . .	6- 7-	105	Locrian 8-Tone #1	8
Major	2-	2 3omit . . .	6- 6 7om . . .	4	Chromatic Dorian	7
Major	2-	2 3- . . .	6- 6 7-	139	Phrygian 9-Tone	9
Major	2-	2 3- . . .	6- 7-	106	Phrygian 8-Tone #1	8
Major	2-	2 3- . . .	6- 7bb	139	Phrygian 9-Tone	9
Major	[2-/2]	3- . . .	6+ 7om	64	Appalachian (#92 & #--) . . .	6

*Use Scale Number to look up scales in The Grand Finale, starting page 405 (cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
Major [2-/2] 3-	6omit 7-	*# 64 Appalachian (#92 & #--)	6
Major 2- 2	4+	107 Hindu	8
Major 2- 2	4 4+	140 Hindu	9
Major 2 2+	4 4+	143 Bartok's 9-Tone	9
Major 2 2+	4 4+	142 Auxiliary Blues	9
Major 2- 2	4+ 5 5+	141 Hindu	9
Major 2- 2	4+ 6- 6	141 Hindu	9
Major 2- 2	5- 5	140 Hindu	9
Major 2 2+	6- 7-	122 Aeolian 8-Tone #1	8
Major 2 2+	7-	123 Dorian 8-Tone #1	8
Major [2/2+]	7-	5 Jewish (#32 & #62)	7
Major 2 2+	7- 7	145 Dorian 9-Tone	9
Major 2 2+	7- 8- 8	145 Dorian 9-Tone	9
Major 2- 3-		6 Neapolitan-Major	7
Major 2- 3- 3 4+	6- 7-	113 Composite #1	8
Major 2- 3- 3 4+	7-	109 Diminished #2	8
Major 2- 3- 3	5 5+	137 Tcherepnin	9
Major 2- 3- 3	5- 6- 7-	110 Espla's	8
Major 2- 3bb 3-	5- 5 6- 7-	138 Locrian 9-Tone	9
Major 2- 3bb 3-	5- 6- 7-	105 Locrian 8-Tone #1	8
Major 2- 3- 3	6- 6	137 Tcherepnin	9
Major 2- 3- 3	6- 7-	111 Spanish 8-Tone	8
Major 2- [3-/3]	6- 7-	7 Polish (#15 & #31)	7
Major 2- 3- 3	7-	112 Latin American	8
Major 2- 3- 4	4+ 5+	115 Zirafkand	8
Major 2- 3- 4	4+ 5+ 6+	116 'Iraq	8
Major 2- 3- 4- 4	5- 6- 7-	110 Espla's	8
Major 2- 3- 4- 4	6- 7-	111 Spanish 8-Tone	8
Major 2- 3- 4	4+ 6- 7-	114 Locrian 8-Tone #2	8
Major 2- 3- 4- 5- 5-	6- 7-	113 Composite #1	8
Major 2- 3- 4+	5om 6-	67 Vilasakhani	6
Major 2- 3- 4om	5- 6-	67 Vilasakhani	6
Major 2- 3- 4-	5- 6- 7-	8 Super-Locrian	7
Major 2- 3- 4om	5- 6- 7-	68 Locrian 6-Tone	6
Major 2- 3- 4om	5- 6- 7om	153 Semitonal Pentatonic #4	5
Major 2- 3- 4+	5om 6- 7om	153 Semitonal Pentatonic #4	5
Major 2- 3- 4+	5+ 6om 7om	153 Semitonal Pentatonic #4	5
Major 2+ 3om 4+	5om 6- 7-	154 Japanese	5
Major 2+ 3om 4om	5- 6- 7-	154 Japanese	5
Major 2- 3- 4om	5- 7-	69 Hidshaf	6
Major 2- 3- 4+	5om 7-	69 Hidshaf	6
Major 2- 3- 4+	6-	10 Raga Todi	7
Major 2- 3- 4+	6+	9 Chromatic Hypophrygian	7
Major 2- 3- 4-	6- 7-	11 Byzantine	7

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
Major 2- 3- 4om 6- 7om *	155	Pelog #1	5
Major 2- 3- 5- 5 6- 7-	114	Locrian 8-Tone #2	8
Major 2- 3- 5 5+ 7-	117	Phrygian 8-tone #2	8
Major 2- 3- 5om 6-	70	Gurjari	6
Major 2- 3- 5+ 6om	70	Gurjari	6
Major 2- 3bb 5- 6bb	3	Chromatic Mixolydian	7
Major 2- 3- 5- 6- 6	115	Zirafkand	8
Major 2- 3- 5- 6- 7-	12	Locrian	7
Major 2- 3- 5om 6- 7om	160	Javanese	5
Major 2- 3om 5- 6- 7-	71	Abuselik	6
Major 2- 3om 5- 6- 7om	156	Pelog #4	5
Major 2- 3om 5- 6om 7-	157	Hirajoshi #2	5
Major 2- 3om 5- 6+ 7om	157	Hirajoshi #2	5
Major 2- 3- 5om 6- 7-	72	Phrygian 6-Tone	6
Major 2+ 3om 5+ 6om 7-	158	Pentatonic #5	5
Major 2+ 3om 5+ 6+ 7om	158	Pentatonic #5	5
Major 2+ 3om 5- 6om 7-	159	Kumoi #5	5
Major 2+ 3om 5- 6+ 7om	159	Kumoi #5	5
Major 2- 3- 5- 6- 7- 7	116	'Iraq	8
Major 2- 3- 5- 7-	13	Hijazi	7
Major 2+ 3om 5om 7-	161	Semitonal Pentatonic #1	5
Major 2- 3- 6-	14	Neapolitan-minor	7
Major 2- 3- 6- 6 7-	117	Phrygian 8-Tone #2	8
Major 2- 3- 6- 7-	15	Phrygian	7
Major 2- 3bb 6- 7bb	4	Chromatic Dorian	7
Major 2- 3- 6- 7om	74	Samanta	6
Major 2- 3om 6- 7-	73	In Scale	6
Major 2- 3om 6- 7om	162	Hirajoshi #4	5
Major 2- 3om 6om 7-	163	Kumoi #2	5
Major 2- 3om 6+ 7om	163	Kumoi #2	5
Major 2+ 3om 6- 7-	75	Irish	6
Major 2+ 3om 6om 7-	164	Pentatonic #2	5
Major 2+ 3om 6+ 7om	164	Pentatonic #2	5
Major 2- 3- 6- 7bb 7-	117	Phrygian 8-Tone	8
Major 2- 3- 7-	16	Javanese	7
Major 2- 3- 7om	76	African	6
Major 2- 3om 7om	165	Japanese Pentatonic #4	5
Major 2+ 3om 7-	77	Dorian 6-Tone	6
Major 2- 4+	17	Marava	7
Major 2- 4 4+	118	Burzburg	8
Major 2- 4 4+ 5+	120	Irak	8
Major 2+ 4 4+ 6om 7-	18	Blues	7
Major 2- 4+ 5om	78	Panchana	6
Major 2- 4+ 5+ 6+	19	Enigmatic (Verdi)	7

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405 (cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#										Name	# of Tones
Major 2+	4+	5om	6om	7-	.	.	.	.	.	.*#169	Diminished Pentatonic	5
Major 2+	4om	5+	6+	7om	.	.	.	.	.	171	Japanese Pentatonic #3	5
Major 2+	4om	5+	6om	7-	.	.	.	.	.	171	Japanese Pentatonic #3	5
Major 2+	4om	5-	6om	7-	.	.	.	.	.	169	Diminished Pentatonic	5
Major 2+	4om	5om	6-	7-	.	.	.	.	.	171	Japanese Pentatonic #3	5
Major 2-	4om	5-	6om	7-	.	.	.	.	.	170	Jazz Dominant Pentatonic	5
Major 2-	4+	5om	6om	7-	.	.	.	.	.	170	Jazz Dominant Pentatonic	5
Major 2-	4+	5om	6+	7om	.	.	.	.	.	170	Jazz Dominant Pentatonic	5
Major 2-	4om	5-	7om	.	.	.	.	.	.	172	Vibhasa	6
Major 2-	4+	5om	7om	.	.	.	.	.	.	172	Vibhasa	5
Major 2-	4+	5om	7-	.	.	.	.	.	.	79	Prometheus-Neapolitan	6
Major 2-	4+	6-	.	.	.	.	.	.	.	20	Chromatic Hypolydian	7
Major 2+	4om	6-	.	.	.	.	.	.	.	80	Augmented	6
Major 2-	4om	6-	7om	.	.	.	.	.	.	175	Rewa	5
Major 2-	4+	6-	7om	.	.	.	.	.	.	81	Combined-Altered	6
Major 2-	4+	7-	.	.	.	.	.	.	.	21	India	7
Major 2+	4+	7-	.	.	.	.	.	.	.	22	Hungarian-Major	7
Major 2-	4om	7om	.	.	.	.	.	.	.	177	Scriabin	5
Major 2-	4+	9	.	.	.	.	.	.	.	119	Scotch Bagpipe tuning	8
Major 2-	5-	.	.	.	.	.	.	.	.	23	Chromatic Lydian	7
Major 2-	5-	5	.	.	.	.	.	.	.	118	Buzurg	8
Major 2-	5-	6-	.	.	.	.	.	.	.	26	Persian	7
Major 2-	5+	6+	.	.	.	.	.	.	.	24	Enigmatic, Des-Inv	7
Major 2+	5+	6+	.	.	.	.	.	.	.	25	Chromatic Phrygian	7
Major 2-	5-	6-	6	.	.	.	.	.	.	120	Irak	8
Major 2-	5-	6-	7-	.	.	.	.	.	.	27	Rahawi	7
Major 2+	5-	6bb	7-	.	.	.	.	.	.	18	Blues	7
Major 2-	5-	7-	.	.	.	.	.	.	.	28	Oriental	7
Major 2+	5+	7-	.	.	.	.	.	.	.	29	Persian	7
Major 2-	5+	7om	.	.	.	.	.	.	.	82	6-Tone Symmetrical	6
Major 2-	6-	.	.	.	.	.	.	.	.	30	Double Harmonic	7
Major 2-	6-	7-	.	.	.	.	.	.	.	31	Spanish	7
Major 2-	6-	7om	.	.	.	.	.	.	.	83	Bangala	6
Major 2-	6+	7om	.	.	.	.	.	.	.	84	Greek	6
Major 2-	6om	7-	.	.	.	.	.	.	.	84	Greek	6
Major 2-	6om	7-	.	.	.	.	.	.	.	84	Greek	6
Major 2+	7-	.	.	.	.	.	.	.	.	32	Roumanian-Major	7
Major 2-	7-	.	.	.	.	.	.	.	.	33	Arabic	7
---3 omit---												
Major 3omit	.	.	.	.	.	.	.	.	.	86	Ionian 6-Tone	6

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol		#		Name		# of Tones
Major	3omit	2- 5- 6- 7-	*# 71	Abuselik		6
Major	3omit	2- 6- 7-	73	In Scale		6
Major	3omit	2+ 6- 7-	75	Irish		6
Major	3omit	2+ 7-	77	Dorian 6-Tone		6
Major	3omit	4+ 7-	89	Overtone 6-Tone		6
Major	3omit	6-	91	Armenian, Anct. Church		6
Major	3omit	7-	95	Appalachian		6
Major	3omit	4omit 2+ 5- 6- 7- . . .	154	Japanese		5
Major	3omit	5omit 2+ 4+ 6- 7- . . .	154	Japanese		5
Major	3omit	5omit 2+ 7- . . .	161	Semitonal Pentatonic #1 . . .		5
Major	3omit	6omit	189	Semitonal Pentatonic #5 . . .		5
Major	3omit	6omit 2- 5- 7-	157	Hirajoshi #2		5
Major	3omit	6omit 2+ 5+ 7-	158	Pentatonic #5		5
Major	3omit	6omit 2+ 5- 7-	159	Kumoi #5		5
Major	3omit	6omit 2+ 7-	164	Pentatonic #2		5
Major	3omit	6omit 2- 7-	163	Kumoi #2		5
Major	3omit	3omit 4+	183	Pelog #2		5
Major	3omit	6omit 5- 7-	188	Japanese Pentatonic #2 . . .		5
Major	3omit	6omit 7-	191	Pentatonic #4		5
Major	3omit	7omit	192	Pentatonic #1		5
Major	3omit	7omit 2+	166	Jazz minor Pentatonic		5
Major	3omit	7omit 2-	165	Japanese Pentatonic #4		5
Major	3omit	7omit 2- 2 6- 6	4	Chromatic Dorian		7
Major	3omit	7omit 2- 5- 6-	156	Pelog #4		5
Major	3omit	7omit 2- 5- 6+	157	Hirajoshi #2		5
Major	3omit	7omit 2+ 5+ 6+	158	Pentatonic #5		5
Major	3omit	7omit 2+ 5- 6+	159	Kumoi #5		5
Major	3omit	7omit 2- 6-	162	Hirajoshi #4		5
Major	3omit	7omit 2- 6+	163	Kumoi #2		5
Major	3omit	7omit 2+ 6+	164	Pentatonic #2		5
Major	3omit	7omit 4+	187	Semitonal Pentatonic #2 . . .		5
Major	3omit	7omit 5- 6+	188	Japanese Pentatonic #2		5
Major	3omit	7omit 6-	190	Kumoi #4		5
Major	3omit	7omit 6+	191	Pentatonic #4		5

---3---

Major	3-	. . . . .	34	Melodic minor	7
Major	[3-/3]	. . . . .	35	Arezzo (#1 & #34)	7
Major	3- 3 4 4+	. . . . .	143	Bartok's 9-Tone	9
Major	3- 3 4 4+ 7-	. . . . .	142	Auxiliary Blues	9

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405 (cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
Major 3- 3 4+ 7-	*#121	Jobim's	8
Major 3- 3 4+ 8om 8+	108	Portuguese	8
Major 3- 3 5- 5	143	Bartok's 9-Tone	9
Major 3- 3 5- 5 7-	142	Auxiliary Blues	9
Major 3- 3 5 5+ 7-	144	Aeolian 9-Tone	9
Major 3- 3 6- 6 7-	144	Aeolian 9-Tone	9
Major 3- 3 6- 7-	122	Aeolian 8-Tone #1	8
Major [3-/3] 7-	36	Basque (#50 & #62)	7
Major [3-/3] 7om	87	Appalachian (#94 & #103)	6
Major 3- 3 7-	123	Dorian 8-Tone #1	8
Major 3- 3 7- 7	145	Dorian 9-Tone	9
Major 3- 4+	37	Lydian-Diminished	7
Major 3- 4 4+ 5+	125	Diminished #1	8
Major 3- 4- 4 5 5+ 7-	144	Aeolian 9-Tone	9
Major 3- 4 4+ 5+ 7-	126	Composite #2	8
Major 3- 4 4+ 6om	38	Conway's 7-Tone	7
Major 3- 4 4+ [6-/6]	124	Conway's 8-Tone	8
Major 3- 4- 4 6- 6 7-	144	Aeolian 9-Tone	9
Major 3- 4- 4 6- 7-	122	Aeolian 8-Tone #1	8
Major 3- [4/4+] 7-	39	Turkish (#44 & #50)	7
Major 3- 4+ 6-	40	Hungarian-minor	7
Major 3- 4- 6- 6 7om	41	Chromatic Hypodorian	7
Major 3- 4- 6- 7-	43	Greek	7
Major 3- 4+ 6- 7-	42	Greek	7
Major 3- 4- 6- 7bb	41	Chromatic Hypodorian	7
Major 3- 4om 6- 7om	184	Hirajoshi #1	5
Major 3- 4om 6om 7-	185	African	5
Major 3- 4om 6+ 7om	185	African	5
Major 3- 4+ 6- 9 10- 11	150	Algerian	10
Major 3- 4+ 7-	44	Roumanian-minor	7
Major 3- 4om 7-	88	Akebono	6
Major 3- 4om 7om	186	Kumoi #1	5
Major 3- 5 5+	127	Arabic	8
Major 3- 5 5+ 6+	129	Isfahan	8
Major 3- 5- 5 [6-/6]	124	Conway's 8-tone	8
Major 3- 5- 5 6om	38	Conway's 7-Tone	7
Major 3- 5 5+ 7-	128	Aeolian 8-Tone #2	8
Major 3- 5- 6- 6	125	Diminished #1	8
Major 3- 5- 6- 6 7-	126	Composite #2	8
Major 3- 5- 6- 7-	45	Half-Diminished	7
Major 3- 5+ 6+ 7om	90	Aeolian 6-Tone	6
Major 3- 5+ 6om 7-	90	Aeolian 6-Tone	6
Major 3- 5om 6- 7-	90	Aeolian 6-Tone	6

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
Major 3- 5- 6- 7 $\flat\flat$ 8- 8 *	125	Diminished #1	8
Major 3- 5- 7-	46	Zangula	7
Major 3- 5- 7- 8- 9- 10- 11 .	151	Armenian, Ancient Church . .	10
Major 3- 6-	47	Harmonic minor	7
Major 3- 6- 6	127	Arabic	8
Major 3- 6 6+	130	Dorian 8-Tone #2	8
Major 3- 6- 6 7-	128	Aeolian 8-Tone #2	8
Major 3- 6- 6 7om	48	Ptolemy's	7
Major 3- 6- 7-	49	Natural minor	7
Major 3- 6om 7-	92	Greek	6
Major 3- 6- 7om	93	Glinka's	6
Major 3- 6+ 7om	92	Greek	6
Major 3- 6- 7 $\flat\flat$	48	Ptolemy's	7
Major 3- 6- 7- 7	129	Isfahan	8
Major 3- 6- 7- 9- 10	149	Adonai Malakh	10
Major 3- 7-	50	Dorian	7
Major 3- 7om	94	Hungarian	6
Major 3- 7- 7	130	Dorian 8-Tone #2	8
Major 3- 7- 8- 8	130	Dorian 8-Tone #2	8
Major 3- 7- 9- 10-	146	Armenian, Ancient Church . . .	9
---4 omit---			
Major 4omit	96	Scotch	6
Major 4omit 2- 3- 5- 6-	67	Vilasakhani	6
Major 4omit 2- 3- 5- 6- 7-	68	Locrian 6-Tone	6
Major 4omit 2- 3- 5- 7-	69	Hidshaf	6
Major 4omit 2- 5- 7-	79	Prometheus-Neapolitan	6
Major 4omit 2+ 6-	80	Augmented	6
Major 4omit 3- 7-	88	Akebono	6
Major 4omit 5- 6- 7-	97	Whole tone	6
Major 4omit 5- 7-	98	Prometheus	6
Major 4omit 7-	100	Scotch	6
Major 4omit [7-/7]	101	Appalachian (#96 & #100) . . .	6
Major 4omit 5omit 2+ 6- 7-	171	Japanese Pentatonic #3	5
Major 4omit 6omit	194	India	5
Major 4omit 6omit 2- 5- 7-	170	Jazz Dominant Pentatonic . . .	5
Major 4omit 6omit 2+ 5- 7-	169	Diminished Pentatonic	5
Major 4omit 6omit 2+ 5+ 7-	171	Japanese Pentatonic #3	5
Major 4omit 6omit 2+ 7-	174	Pentatonic-Dominant	5
Major 4omit 6omit 2- 7-	176	Dominant Pentatonic	5

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405 (cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
Major 4omit 6omit 5- 7- *	193	Jazz Pentatonic	5
Major 4omit 6omit 3- 7-	185	African	5
Major 4omit 6omit 7-	196	African	5
Major 4omit 7omit	197	Pentatonic #3	5
Major 4omit 7omit 2-	177	Scriabin	5
Major 4omit 7omit 2- 3- 5- 6-	153	Semitonal Pentatonic #4	5
Major 4omit 7omit 2- 3- 6-	155	Pelog #1	5
Major 4omit 7omit 2- 5-	172	Vibhasa	5
Major 4omit 7omit 2+ 5+ 6+	171	Japanese Pentatonic #3	5
Major 4omit 7omit 2- 6-	175	Rewa	5
Major 4omit 7omit 3-	186	Kumoi #1	5
Major 4omit 7omit 3- 6-	184	Hirajoshi #1	5
Major 4omit 7omit 3- 6+	185	African	5
Major 4omit 7omit 6-	195	Japanese Pentatonic #1	5
---4---			
Major 4+	51	Lydian	7
Major 4 4+	131	Ryo 8-Tone	8
Major 4 4+ 6 6+	147	Ryo 9-Tone	9
Major 4 4+ 7-	133	Hindu	8
Major 4 4+ 7- 7	147	Ryo 9-Tone	9
Major 4+ 5+	52	Lydian-Augmented	7
Major 4+ 5 5+	132	Hindu	8
Major 4+ 5+ 6+	53	Leading Whole-Tone	7
Major 4+ 5om 6+ 7om	193	Jazz Pentatonic	5
Major 4+ 5+ 6om 7-	97	Whole Tone	6
Major 4+ 5+ 6+ 7om	97	Whole Tone	6
Major 4+ 5om 7-	98	Prometheus	6
Major 4+ 6- 6	132	Hindu	8
Major 4+ 6- 7-	54	Lydian-minor	7
Major 4+ 7-	55	Overtone	7
Major 4+ 7om	99	Lydian 6-Tone	6
---5 omit---			
Major 5omit 2- 3- 4+ 6-	67	Vilasakhani	6
Major 5omit 2- 3- 4+ 7-	69	Hidshaf	6
Major 5omit 2- 3- 6-	70	Gurjari	6
Major 5omit 2- 3- 6- 7-	72	Phrygian 6-Tone	6
Major 5omit 2- 4+	78	Panchana	6

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405

(cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol		#	Name	# of Tones
Major	5omit 2- 4+ 7- *	79	Prometheus-Neapolitan	6
Major	5omit 3- 6- 7-	90	Aeolian 6-Tone	6
Major	5omit 4+ 7-	98	Prometheus	6
Major	5omit 6omit 2- 4+ 7-	170	Jazz Dominant Pentatonic . . .	5
Major	5omit 6omit 2+ 4+ 7-	169	Diminished Pentatonic	5
Major	5omit 6omit 4+ 7-	193	Jazz Pentatonic	5
Major	5omit 7omit	198	African	5
Major	5omit 7omit 2- 3- 4+ 6- . . .	153	Semitonal Pentatonic #4 . . .	5
Major	5omit 7omit 2- 3- 6- . . .	160	Javanese	5
Major	5omit 7omit 2- 4+	172	Vibhasa	5
Major	5omit 7omit 2- 4+ 6+ . . .	170	Jazz Dominant Pentatonic . . .	5
Major	5omit 7omit 4+ 6+ . . .	193	Jazz Pentatonic	5
---5---				
Major	5+	56	Ionian-Augmented	7
Major	5+ 5	134	Bop Scale	8
Major	5- 5	131	Ryo 8-Tone	8
Major	5- 5 6 6+	147	Ryo 9-Tone	9
Major	5- 5 7 7-	147	Ryo 9-Tone	9
Major	5- 6- 7-	57	Locrian-Major	7
Major	5- 7-	58	Zenkla	7
Major	5+ 7-	59	Rummel-Meia	7
---6 omit---				
Major	6omit 2- 2 3+ 4+ 7-	3	Chromatic Mixolydian	7
Major	6omit [2-/2] 3- 7- . . .	64	Appalachian (#92 & #--) . . .	6
Major	6omit 2- 3- 5+	70	Gurjari	6
Major	6omit 2+ 4 4+ 7- . . .	18	Blues	7
Major	6omit 2- 7- . . .	84	Greek	6
Major	6omit 3- 4 4+	38	Conway's 7-Tone	7
Major	6omit 3- 5- 5	38	Conway's 7-Tone	7
Major	6omit 3- 5+ 7- . . .	90	Aeolian 6-Tone	6
Major	6omit 3- 7- . . .	92	Greek	6
Major	6omit 4+ 5+ 7- . . .	97	Whole Tone	6
Major	6omit 7- . . .	102	Mixolydian 6-Tone	6
Major	6omit 7omit 2- 3- 4+ 5+ . . .	153	Semitonal Pentatonic #4 . . .	5

*Use Scale Numbers to locate scales in The Grand Finale, starting page 405 (cont'd)

Chart #13: Symbols & Alternate Symbols (cont'd)

Symbol	#	Name	# of Tones
---6---			
Major 6-	*# 60	Harmonic-Major	7
Major 6- 6	134	Bop Scale	8
Major 6 6+	136	Mixolydian 8-Tone	8
Major 6- 7-	61	Hindustan	7
Major 6+ 7om	102	Mixolydian 6-Tone	6
Major low 6 7, high 3- 6- 7-	148	Tudor Scale	9
Major low 6 7, high 7-	149	Adonai Malakh	9
---7 omit---			
Major 7omit	103	Guido's	6
Major 7omit 2- 2 3+ 4+ 6+	3	Chromatic Mixolydian	7
Major 7omit [2-/2] 3- 6+	64	Appalachian (#92 & #--)	6
Major 7omit 2- 3-	76	African	6
Major 7omit 2- 3- 6-	74	Samanta	6
Major 7omit 2- 4+ 6-	81	Combined-Altered	6
Major 7omit 2- 5+	82	6-Tone Symmetrical	6
Major 7omit 2- 6-	83	Bangala	6
Major 7omit 2- 6+	84	Greek	6
Major 7omit 3-	94	Hungarian	6
Major 7omit [3-/3]	87	Appalachian (#94 & #103)	6
Major 7omit 3- 5+ 6+	90	Aeolian 6-Tone	6
Major 7omit 3- 6-	93	Glinka's	6
Major 7omit 3- 6+	92	Greek	6
Major 7omit 3- 6- 6	48	Ptolemy's	7
Major 7omit 4+	99	Lydian 6-Tone	6
Major 7omit 4+ 5+ 6+	97	Whole Tone	6
Major 7omit 6+	102	Mixolydian 6-Tone	6
---7---			
Major 7-	62	Mixolydian	7
Major 7- 7	136	Mixolydian 8-Tone	8
Major [7-/7]	63	Negro Spiritual	7
Major 7- 9 10- 11	152	Russian liturgical	10
Major low 7, 3- 6- 7-	135	Magon Abot	8
Major low 7, high 7-	149	Adonai Malakh	10

*For more information on each scale, use Scale Numbers
to locate scale in The Grand Finale (starting on page 405)

End of Chart #13

CHAPTER 8

ALL SCALES IN BOOK (#1 - #198)

BY INTERVALS

CONTENTS OF CHAPTER 8:

An Explanation of Intervals	Page 99
Order of 1st Intervals in Chart #14	101
Chart #14: Scales by Intervals	102

AN EXPLANATION OF INTERVALS & CHART #14

A scale consists of various consecutive musical notes following each other at set intervals, usually contained within an octave. In the Western world our octave consists of 12 intervals, each designated as a half-step, making the octave consist of 6 whole steps.

These 6 whole steps can be divided up in many different ways (each way making a different scale) by using half steps ($\frac{1}{2}$), whole steps (1), a step and a half ($1\frac{1}{2}$), and two steps (2). For instance, if a person starts at any note and then begins going up progressively one whole step (1), another whole step (1) and a half step ($\frac{1}{2}$), then another whole step (1), another (1), and yet another whole step (1), and finally a half step ($\frac{1}{2}$), that person has just played the Major Scale -- *no matter on what note he started*. This can be written by just listing the intervals in order: 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ (which equals 6 whole steps). Any scale can be shown strictly by the steps (intervals) that are between its various consecutive tones.

Usually we speak of a scale as being a certain number of tones within an octave, a tone being each separate note. There are 5-Tone Scales, 6-Tone Scales, etc. A 5-Tone Scale starts on a particular note, goes up on four other notes, and then ends on the beginning note but an octave higher. It has 5 *different* tones plus the "octave" tone. The spacing of these tones is shown by its intervals, as we just did above with the Major Scale (a 7-Tone Scale). These intervals are *unchanging* within the scale, because if they change, you then have a different scale. (A piece of music can, and often does, have several different scales within itself. Some of these scales are used only briefly, but it is still a different scale.)

Chart #14, which follows, is a list of the scales of this book *by their intervals*. They are listed "interval-numerically" starting with the first *three* intervals (which make up the first tetrachord) of the scales. That is, $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ would be the first set of three intervals numerically, working up numerically to the next set of three intervals ($\frac{1}{2}$ - $\frac{1}{2}$ -1), then the next set of three intervals numerically ($\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$), and going on up numerically by the first set of 3 intervals in each scale. The order of this "interval-numerically" way of making up Chart #14 is listed on the page 101, the page after this explanation.

So, to find a scale, you start out looking in Chart #14 for the *first* set of three intervals of your scale. After you have found that, then you go down the list of scales that start with those intervals and look numerically for the *last* set of 3 intervals in the scale. The *middle* connecting tone(s), if any, (or the *middle* set of 3 intervals in the case of a 9-Tone Scale) are the very last consideration in this system.

The order of the intervals is shown on page 101. This may sound confusing, but it really isn't. Just think of it as a filing system: (1) 1st set of 3 intervals, (2) last set of 3 intervals, and (3) middle connecting interval(s).

Because this chart goes by the first three intervals, the chart *mixes up scales with varying numbers of tones* -- 5-Tone (Pentatonic), 6-Tone, 7-Tone (the best known of which are our own Major and minor scales), 8-Tone, and 9-Tone Scales, are all mixed together. The Intervals and Name are given for each scale, as well as the Scale Number.

The intervals are divided to show their tetrachords (as 3 consecutive intervals are called) and connecting intervals for the convenience of those who might be interested, as well as for convenience in "filing" them. Hence, a scale with intervals of $1-1-\frac{1}{2}-1-1-\frac{1}{2}-1$ will be shown as $1-1-\frac{1}{2} \dots -1- \dots 1-\frac{1}{2}-1$, showing first tetrachord, connecting interval, and last tetrachord. Also, do you notice how much easier that is to see? The chapter after this one, Chart #15, starting on page 113, uses this division to make a Tetrachordal Formula and lists the Scales by Formula.

The few scales that differ below the octave are also listed in this chart. They are listed by first tetrachord, just as the other scales. However, the "extra" intervals below the octave are put down first, then a comma, then the first tetrachord.

Not shown in Chart #14 are the few scales of this book that are the Combination Scales of this book. See Chart #18 on page 124, for these scales.

NOTE: Remember, the Scale Number, allows you to look up any particular scale in The Grand Finale (starting on page 405) for a *summary* of all of the information on that scale that is found in this book.

ORDER OF 1ST INTERVALS IN CHART #14
(starting on next page)

Interval	Page	Interval	Page
$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$	102	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$	107
$\frac{1}{2}-\frac{1}{2}-1$	102	$1\frac{1}{2}-\frac{1}{2}-1$	107
$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$	102	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$	107
$\frac{1}{2}-1-\frac{1}{2}$	102	$1\frac{1}{2}-\frac{1}{2}-2$	107
$\frac{1}{2}-1-1$	102	$1\frac{1}{2}-1-\frac{1}{2}$	107
$\frac{1}{2}-1-1\frac{1}{2}$	103	$1\frac{1}{2}-1-1$	107
$\frac{1}{2}-1-2$	103	$1\frac{1}{2}-1-1\frac{1}{2}$	107
$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$	103	$1\frac{1}{2}-1-2$	108
$\frac{1}{2}-1\frac{1}{2}-1$	103	$1\frac{1}{2}-1\frac{1}{2}-1$	108
$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$	104		
$\frac{1}{2}-2-\frac{1}{2}$	104	$2-\frac{1}{2}-1$	108
$\frac{1}{2}-2-1$	104	$2-\frac{1}{2}-2$	108
		$2-1-\frac{1}{2}$	108
$1-\frac{1}{2}-\frac{1}{2}$	104	$2-1-1$	108
$1-\frac{1}{2}-1$	104	$2-1-1\frac{1}{2}$	108
$1-\frac{1}{2}-1\frac{1}{2}$	105		
$1-\frac{1}{2}-2$	105		
$1-1-\frac{1}{2}$	105		
$1-1-1$	106		
$1-1-1\frac{1}{2}$	106		
$1-1\frac{1}{2}-\frac{1}{2}$	106		
$1-1\frac{1}{2}-1$	106		
$1-2-\frac{1}{2}$	107		

SCALES BY INTERVALS (Combination Scales omitted)

CHART #14

INTERVALS	#	NAME
--- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ ---		
$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ 1-1- $\frac{1}{2}$ $\frac{1}{2}$ - $\frac{1}{2}$ -1	#139	Phrygian 9-Tone
$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1	106	Phrygian 8-Tone #1
$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ 1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ -1-1	138	Locrian 9-Tone
$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1-1-1	105	Locrian 8-Tone
--- $\frac{1}{2}$ - $\frac{1}{2}$ -1 ---		
$\frac{1}{2}$ - $\frac{1}{2}$ -1 1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ -1- $\frac{1}{2}$	#141	Hindu
$\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$	104	Hindu
$\frac{1}{2}$ - $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	107	Hindu
$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ 1-1- $\frac{1}{2}$	140	Hindu
--- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ ---		
$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	#4	Chromatic Dorian, Asc.
$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1	3	Chromatic Mixolydian, Asc.
--- $\frac{1}{2}$ -1- $\frac{1}{2}$ ---		
$\frac{1}{2}$ -1- $\frac{1}{2}$ $\frac{1}{2}$ -1- $\frac{1}{2}$ $\frac{1}{2}$ -1- $\frac{1}{2}$	#137	Tcherepnin's
$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	113	Composite #1
$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	11	Byzantine
$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1	111	Spanish 8-Tone
$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1	112	Latin American
$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	109	Diminished #2
$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- 1-1-1	8	Super-Locrian
$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1	110	Espla's Scale
--- $\frac{1}{2}$ -1-1---		
$\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1	#117	Phrygian 8-Tone #2
$\frac{1}{2}$ -1-1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$	115	Zirafkand (Arabic)
$\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ -1-1	15	Phrygian
$\frac{1}{2}$ -1-1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	114	Locrian 8-Tone #2
$\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	14	Neapolitan-minor
$\frac{1}{2}$ -1-1 - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ - $\frac{1}{2}$	116	'Iraq (Arabic)
$\frac{1}{2}$ -1-1 -1- 1- $\frac{1}{2}$ -1	16	Javanese
$\frac{1}{2}$ -1-1 1- $\frac{1}{2}$ -2	74	Samanta (Hindu)
$\frac{1}{2}$ -1-1 -1- 1-1- $\frac{1}{2}$	6	Neapolitan-Major
		($\frac{1}{2}$ -1-1 cont'd)

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1-1-1	#12	Locrian
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1-1-1 $\frac{1}{2}$	76	African
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	13	Hijazi (Arabic)
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1 $\frac{1}{2}$ -1-1	72	Phrygian 6-Tone
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	70	Gurjari (Hindu)
$\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1 $\frac{1}{2}$ -2	160	Javanese
--- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ ---		
$\frac{1}{2}$ -1-1 $\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	#10	Raga Todi (Hindu)
$\frac{1}{2}$ -1-1 $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1-1	68	Locrian 6-Tone
$\frac{1}{2}$ -1-1 $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$	67	Vilasakhani (Hindu)
$\frac{1}{2}$ -1-1 $\frac{1}{2}$ $-\frac{1}{2}$ - 1-2	153	Semitonal Pentatonic #4
$\frac{1}{2}$ -1-1 $\frac{1}{2}$ $-\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	69	Hidshaf (Arabic)
--- $\frac{1}{2}$ -1-2 ---		
$\frac{1}{2}$ -1-2 $-\frac{1}{2}$ - $\frac{1}{2}$ -2	#155	Pelog #1
--- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ ---		
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$	#120	Irak (Arabic)
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$ -1-1	31	Spanish
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	30	Double Harmonic
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$	24	Enigmatic, Des.-Inv.
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	33	Arabic
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1- $\frac{1}{2}$ -2	83	Bangala (Hindu)
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$	2	Ananda (Hindu)
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$	118	Buzurg (Arabic)
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1-1	27	Rahawi (Arabic)
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$	26	Persian
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1-1 $\frac{1}{2}$ -1	84	Greek
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	28	Oriental
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	82	6-Tone Symmetrical
$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ $-\frac{1}{2}$ - 1 $\frac{1}{2}$ -1- $\frac{1}{2}$	23	Chromatic Lydian, Asc.
--- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 ---		
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	#81	Combined-Altered (Hindu)
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	20	Chromatic Hypolydian, Asc.
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$	19	Enigmatic, Ascending
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	21	India
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$	17	Marava (Hindu)
$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$ - 1	*119	Scotch Bagpipe Tuning ($\frac{1}{2}$ -1 $\frac{1}{2}$ -1 cont'd)

*more than an octave

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
$\frac{1}{2}$ - $1\frac{1}{2}$ -1 $1\frac{1}{2}$ - $\frac{1}{2}$ -1	#79	Prometheus-Neapolitan
$\frac{1}{2}$ - $1\frac{1}{2}$ -1 $1\frac{1}{2}$ -1- $\frac{1}{2}$	78	Panchana
$\frac{1}{2}$ - $1\frac{1}{2}$ -1 $1\frac{1}{2}$ - $1\frac{1}{2}$	172	Vibhasa (Hindu)
$\frac{1}{2}$ - $1\frac{1}{2}$ -1 2-1	170	Jazz Dominant Pentatonic
--- $\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ ---		
$\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ $\frac{1}{2}$ -2	#175	Rewa (Hindu)
$\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ 1- $1\frac{1}{2}$	177	Scriabin
$\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ $1\frac{1}{2}$ -1	176	Dominant Pentatonic
--- $\frac{1}{2}$ -2- $\frac{1}{2}$ ---		
$\frac{1}{2}$ -2- $\frac{1}{2}$ 1-1-1	# 71	Abuselik (Arabic)
$\frac{1}{2}$ -2- $\frac{1}{2}$ 1-2	156	Pelog #4
$\frac{1}{2}$ -2- $\frac{1}{2}$ 2-1	157	Hirajoshi #2
--- $\frac{1}{2}$ -2-1 ---		
$\frac{1}{2}$ -2-1 $\frac{1}{2}$ -1-1	# 73	In Scale (Japan)
$\frac{1}{2}$ -2-1 $\frac{1}{2}$ -2	162	Hirajoshi #4
$\frac{1}{2}$ -2-1 1- $1\frac{1}{2}$	165	Japanese Pentatonic #4
$\frac{1}{2}$ -2-1 $1\frac{1}{2}$ -1	163	Kumoi #2
--- 1- $\frac{1}{2}$ - $\frac{1}{2}$ ---		
1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	#145	Dorian 9-Tone
1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ -1- $\frac{1}{2}$ $\frac{1}{2}$ - $\frac{1}{2}$ -1	144	Aeolian 9-Tone
1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$	41	Chromatic Hypodorian, Asc.
1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1	122	Aeolian 8-Tone #1
1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1-1	43	Greek
1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ 1- $\frac{1}{2}$ -1	142	Auxiliary Blues
1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1	123	Dorian 8-Tone
1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	121	Jobim's
1- $\frac{1}{2}$ - $\frac{1}{2}$ $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ 1-1- $\frac{1}{2}$	143	Bartok's 9-Tone
1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1-1-1	*108	Portuguese
--- 1- $\frac{1}{2}$ -1 ---		
1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1	#128	Aeolian 8-Tone #2
1- $\frac{1}{2}$ -1 -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	130	Dorian 8-Tone #2
1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ 1	126	Composite #2
1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$	48	Ptolemy's
1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -2- $\frac{1}{2}$	38	Conway's 7-Tone
		(1- $\frac{1}{2}$ -1 cont'd)

*more than an octave

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
1- $\frac{1}{2}$ -1	#125	Diminished #1
1- $\frac{1}{2}$ -1	127	Arabic
1- $\frac{1}{2}$ -1	49	Natural minor
$\frac{1}{2}$, 1- $\frac{1}{2}$ -1 ..	*135	Magon Abot (Jewish)
1- $\frac{1}{2}$, 1- $\frac{1}{2}$ -1	*148	Tudor Scale
1- $\frac{1}{2}$ -1	47	Harmonic minor
1- $\frac{1}{2}$ -1	129	Isfahan (Arabic)
1- $\frac{1}{2}$ -1	50	Dorian
1- $\frac{1}{2}$ -1	*146	Armenian, Ancient Church
1- $\frac{1}{2}$ -1	93	Glinka's
1- $\frac{1}{2}$ -1	34	Melodic minor
1- $\frac{1}{2}$ -1	45	Half-Diminished
1- $\frac{1}{2}$ -1	94	Hungarian
1- $\frac{1}{2}$ -1	92	Greek
1- $\frac{1}{2}$ -1	*151	Armenian, Ancient Church
1- $\frac{1}{2}$ -1	46	Zangula (Arabic)
1- $\frac{1}{2}$ -1	90	Aeolian 6-Tone
--- 1- $\frac{1}{2}$ -1 $\frac{1}{2}$ ---		
1- $\frac{1}{2}$ -1 $\frac{1}{2}$	#42	Greek
1- $\frac{1}{2}$ -1 $\frac{1}{2}$	40	Hungarian-minor
1- $\frac{1}{2}$ -1 $\frac{1}{2}$	*150	Algerian
1- $\frac{1}{2}$ -1 $\frac{1}{2}$	44	Roumanian-minor
1- $\frac{1}{2}$ -1 $\frac{1}{2}$	37	Lydian-Diminished
--- 1- $\frac{1}{2}$ -2 ---		
1- $\frac{1}{2}$ -2	#184	Hirajoshi #1
1- $\frac{1}{2}$ -2	88	Akebono (Japanese)
1- $\frac{1}{2}$ -2	186	Kumoi #1
1- $\frac{1}{2}$ -2	185	African
--- 1-1- $\frac{1}{2}$ ---		
1-1- $\frac{1}{2}$	#147	Ryo 9-Tone
1-1- $\frac{1}{2}$	136	Mixolydian 8-Tone
1-1- $\frac{1}{2}$	59	Rummel-Meia
1-1- $\frac{1}{2}$	134	Bop Scale
1-1- $\frac{1}{2}$	56	Ionian-Augmented
1-1- $\frac{1}{2}$	61	Hindustan
1-1- $\frac{1}{2}$	60	Harmonic-Major
1-1- $\frac{1}{2}$	62	Mixolydian
1-1- $\frac{1}{2}$	*152	Russian, Liturgical

(1-1- $\frac{1}{2}$ cont'd)

*more than an octave

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	#133	Hindu
1- $\frac{1}{2}$, 1-1- $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1	*149	Adonai Malakh
1-1- $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$	1	Major
1-1- $\frac{1}{2}$ 1-1 $\frac{1}{2}$ -1	102	Mixolydian 6-Tone
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	58	Zenkla (Arabic)
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	131	Ryo 8-Tone
1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1	57	Locrian-Major
1-1- $\frac{1}{2}$ 1-1-1 $\frac{1}{2}$	103	Guido's
1-1- $\frac{1}{2}$ 2-1 $\frac{1}{2}$	198	African
--- 1-1-1 ---		
1-1-1 -1- $\frac{1}{2}$ -1- $\frac{1}{2}$	#52	Lydian-Augmented
1-1-1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$	132	Hindu
1-1-1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	54	Lydian-minor
1-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$	99	Lydian 6-Tone
1-1-1 - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	51	Lydian
1-1-1 -1- 1- $\frac{1}{2}$ - $\frac{1}{2}$	53	Leading Whole Tone
1-1-1 - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	55	Overtone
1-1-1 1-1-1	97	Whole Tone
1-1-1 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	98	Prometheus
1-1-1 2-1	193	Jazz Pentatonic
--- 1-1-1 $\frac{1}{2}$ ---		
1-1-1 $\frac{1}{2}$ $\frac{1}{2}$ -2	#195	Japanese Pentatonic #1
1-1-1 $\frac{1}{2}$ 1- $\frac{1}{2}$ -1	100	Scotch
1-1-1 $\frac{1}{2}$ 1-1- $\frac{1}{2}$	96	Scotch
1-1-1 $\frac{1}{2}$ 1-1 $\frac{1}{2}$	197	Pentatonic #3
1-1-1 $\frac{1}{2}$ 1 $\frac{1}{2}$ -1	196	African
1-1-1 $\frac{1}{2}$ 2- $\frac{1}{2}$	194	India
--- 1-1 $\frac{1}{2}$ - $\frac{1}{2}$ ---		
1-1 $\frac{1}{2}$ - $\frac{1}{2}$ 2-1	#188	Japanese Pentatonic #2
--- 1-1 $\frac{1}{2}$ -1 ---		
1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	#91	Armenian, Ancient Church
1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -2	190	Kumoi #4
1-1 $\frac{1}{2}$ -1 1- $\frac{1}{2}$ -1	95	Appalachian
1-1 $\frac{1}{2}$ -1 1-1- $\frac{1}{2}$	86	Ionian 6-Tone
1-1 $\frac{1}{2}$ -1 1-1 $\frac{1}{2}$	192	Pentatonic #1
1-1 $\frac{1}{2}$ -1 1 $\frac{1}{2}$ -1	191	Pentatonic #4
1-1 $\frac{1}{2}$ -1 2- $\frac{1}{2}$	189	Semitonal Pentatonic #5

*more than an octave

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
--- 1-2- $\frac{1}{2}$ ---		
1-2- $\frac{1}{2}$ 1- $\frac{1}{2}$ -1	# 89	Overtone 6-Tone
1-2- $\frac{1}{2}$ 1-1 $\frac{1}{2}$	187	Semitonal Pentatonic #2
1-2- $\frac{1}{2}$ 2- $\frac{1}{2}$	183	Pelog #2
--- 1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ ---		
1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1	#32	Roumanian-Major
1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1	18	Blues
1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1	29	Persian
1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$	25	Chromatic Phrygian, Asc.
--- 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 ---		
1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	# 22	Hungarian-Major
1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 2-1	169	Diminished Pentatonic
--- 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ ---		
1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	# 80	Augmented
1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ 1 $\frac{1}{2}$ -1	174	Pentatonic-Dominant
--- 1 $\frac{1}{2}$ - $\frac{1}{2}$ -2 ---		
1 $\frac{1}{2}$ - $\frac{1}{2}$ -2 1-1	#171	Japanese Pentatonic #3
--- 1 $\frac{1}{2}$ -1- $\frac{1}{2}$ ---		
1 $\frac{1}{2}$ -1- $\frac{1}{2}$ $\frac{1}{2}$ -1 $\frac{1}{2}$ -1	#66	Blues
1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	9	Chrom. Hypophrygian, Asc.
1 $\frac{1}{2}$ -1- $\frac{1}{2}$ 2-1	159	Kumoi #5
--- 1 $\frac{1}{2}$ -1-1 ---		
1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1	#75	Irish
1 $\frac{1}{2}$ -1-1 1- $\frac{1}{2}$ -1	77	Dorian 6-Tone
1 $\frac{1}{2}$ -1-1 1-1- $\frac{1}{2}$	65	African
1 $\frac{1}{2}$ -1-1 1-1 $\frac{1}{2}$	166	Jazz minor Pentatonic
1 $\frac{1}{2}$ -1-1 1 $\frac{1}{2}$ -1	164	Pentatonic #2
--- 1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ ---		
1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ 1-1	#158	Pentatonic #5

(cont'd)

Chart #14: Scales by Intervals (cont'd)

Intervals	#	Name
--- $1\frac{1}{2}$ -1-2 ---		
$1\frac{1}{2}$ -1-2 $\frac{1}{2}$ -1	#161	Semitonal Pentatonic #1
--- $1\frac{1}{2}$ - $1\frac{1}{2}$ -1 ---		
$1\frac{1}{2}$ - $1\frac{1}{2}$ -1 1-1	#154	Japanese
--- 2- $\frac{1}{2}$ -1 ---		
2- $\frac{1}{2}$ -1 1- $\frac{1}{2}$ -1	# 85	Polish
2- $\frac{1}{2}$ -1 1- $1\frac{1}{2}$	182	Bulgarian
2- $\frac{1}{2}$ -1 $1\frac{1}{2}$ -1	181	Semitonal Pentatonic #3
2- $\frac{1}{2}$ -1 2- $\frac{1}{2}$	180	Pelog #5
--- 2- $\frac{1}{2}$ -2 ---		
2- $\frac{1}{2}$ -2 $\frac{1}{2}$ -1	#179	Pelog #3
2- $\frac{1}{2}$ -2 1- $\frac{1}{2}$	178	Hirajoshi #3
--- 2-1- $\frac{1}{2}$ ---		
2-1- $\frac{1}{2}$ 2- $\frac{1}{2}$	#173	Hirajoshi #5
--- 2-1-1 ---		
2-1-1 $1\frac{1}{2}$ - $\frac{1}{2}$	#168	Japanese Pentatonic #5
--- 2-1- $1\frac{1}{2}$ ---		
2-1- $1\frac{1}{2}$ 1- $\frac{1}{2}$	#167	Kumoi #3

End of Chart #14

CHAPTER 9

ALL SCALES BY 1ST TETRACHORD, TONE GROUPS MIXED (by FORMULA)

CONTENTS OF CHAPTER 9:

A Short Explanation of Chart #15	Page 111
Order of 1st Tetrachord in Chart #15	112
Chart #15: All Scales by 1st Tetrachord, Tone Groups Mixed (by FORMULA) ...	113

A SHORT EXPLANATION OF CHART #15

This Chart is Titled "All Scales by 1st Tetrachord, Tone Groups Mixed (by FORMULA)". In this chart are all of the scales that are in this book. The order in which they are listed has to do with their intervals. On pages 23, 24, and 25, can be found an explanation of tetrachords (which are made up of four consecutive notes and the intervals between those notes) and a list of the tetrachords found in this book.

A scale that is divided up into its tetrachord and connecting intervals (if any) can be very easily identified. I have chosen to call the signs for the tetrachords plus any connecting intervals the FORMULA of a scale. Starting on page 39, it shows you how to make a Formula for a scale and how to use that Formula to identify that scale easily. (This is Method #2.)

Chart #15, on the following pages, lists all of the scales in this book by their first Tetrachords. The tone groups (5-Tone, 6-Tone, 7-Tone, 8-Tone, 9-Tone, and 10-Tone) are all mixed up in this chart because the scales go by their first tetrachord rather than by their Scale Number. The order of the "filing system" of the 1st Tetrachords is listed on the next page. All of the scales with the first tetrachord "M" are together, those with the first tetrachord "mN" are together, etc. Within the "M" group or other tetrachord group the scales are then listed by the order of the last tetrachord of the scale. The order for these is the same as the order for the first tetrachord. The connecting interval(s) or connecting tetrachord (if any) is the very last consideration in the "filing" of the scales. So, the scales are filed:

- (1) by the 1st tetrachord,
- (2) by the last tetrachord, and
- (3) by the connecting interval(s) or connecting tetrachord (if any).

This may sound confusing, but actually it isn't once you get down how the "filing system" works. And it is worth taking a little time to understand, since this chart makes for very easy identification of a scale.

NOTE: The *Formula of a scale is unchanging*, since, of course, the scale's intervals don't change. The Formula is the easiest and most accurate way of looking up a scale in this book.

NOTE: Combination Scales are listed twice, once for each tetrachord in the combination, for greater ease in locating them.

NOTE: The Number of each Scale is also given next to the Scale's Name. This allows for reference to The Grand Finale (starting on page 405) where each scale is found with a summary of all of the information this book has about that particular scale.

NOTE: "om" = omit that tone in the scale

ORDER OF 1ST TETRACHORD IN CHART #15
(which starts on the following page)

<u>Tetrachord</u>	<u>Page</u>	<u>Tetrachord</u>	<u>Page</u>
M	113	(13)	118
m	113	(14)	118
mN	114	(15)	118
mH	114	(16)	118
W	115	(17)	118
Dim	115	(19)	118
Aug	115	(b)	119
(1)	116	(d)	119
(2)	116	(e)	119
(3)	116	(h)	119
(4)	116	(k)	119
(5)	116	(p)	119
(6)	117	(q)	119
(7)	117	(u)	119
(8)	117	(y)	120
(9)	117	(z)	120
(10)	117	(aa)	120
(11)	118	(bb)	120

ALL SCALES BY 1ST TETRACHORD, TONE GROUPS MIXED
(by FORMULA)

CHART #15

FORMULA	#	NAME	SYMBOL	# OF TONES
--- M ---				
M -1-	#1	Major	Major	7
M -1- [M/m]	63	Negro Spiritual	*Major [7-/7]	7
M - $\frac{1}{2}$ - $\frac{1}{2}$ -	131	Ryo 8-Tone	Major 4 4+	8
M -1-	62	Mixolydian	Major 7-	7
1- $\frac{1}{2}$, M -1-	149	Adonai Malakh	**Major low 6 7, high 7-	9
M -1-	152	Russian Lit.	**Major 7- 9 10- 11	10
M - $\frac{1}{2}$ - $\frac{1}{2}$ -	133	Hindu	Major 5- 5 7-	8
M -1- [m/M]	63	Negro Spiritual	*Major [7-/7]	7
M -1- mN	61	Hindustan	Major 6- 7-	7
M -1- mH	60	Harmonic-Major	Major 6-	7
M - $\frac{1}{2}$ -	57	Locrian-Major	Major 5- 6- 7-	7
M -1 $\frac{1}{2}$ -	56	Ionian-Augmented	Major 5+	7
M -1- $\frac{1}{2}$ -	134	Bop Scale	Major 6- 6	8
M -1-1-	(1) 136	Mixolydian 8-Tone	Major 7- 7	8
M - (2) - (1)	147	Ryo 9-Tone	Major 4 4+ 7- 7	9
M -1 $\frac{1}{2}$ - (2)	59	Rummel-Meia	Major 5+ 7-	7
M - (9)	103	Guido's	Major 7 omit	6
M - (11)	102	Mixolydian 6-Tone	Major 6 omit 7-	6
M - $\frac{1}{2}$ - (14)	58	Zenkla	Major 5- 7-	7
M - (x-15)	198	African	Major 5omit 7omit	5
[M/m] -1-	35	Arezzo	*Major [3-/3]	7
[M/m] -1-	36	Basque	*Major [3-/3] 7-	7
[M/m] - (9)	87	Appalachian	*Major [3-/3] 7omit	7
[(M/(13))] -1-	5	Jewish	*Major [2/2+] 7-	7
--- m ---				
m -1-	34	Melodic minor	Major 3-	7
m - $\frac{1}{2}$ - $\frac{1}{2}$ - [M/mH]	124	Conway's 8-Tone	*Major 3- 4 4+ [6-/6]	8
m -1-	50	Dorian	Major 3- 7-	7
m -1- m - $\frac{1}{2}$ -1	146	Armenian, Anct. Ch...	Major 3- 7- 9- 10-	9
m -1- mN	49	Natural minor	Major 3- 6- 7-	7
$\frac{1}{2}$, m -1-	135	Magon Abot	**Major low 7, 3- 6- 7-	8
1- $\frac{1}{2}$, m -1-	148	Tudor Scale	**Major low 6- 7, 3- 6- 7-	9
m -1-	47	Harmonic minor	Major 3- 6-	7
m - $\frac{1}{2}$ - $\frac{1}{2}$ - [mH/M]	124	Conway's 8-Tone	*Major 3- 4 4+ [6-/6]	8
m - $\frac{1}{2}$ -	45	Half-Diminished	Major 3- 5- 6- 7-	7
m - $\frac{1}{2}$ -1-	125	Diminished #1	Major 3- 5- 6- 6	8
				("m" cont'd)

*Combination Scale, see page 124

**more than an octave, see page 127

(cont'd)

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
m -1- $\frac{1}{2}$ -	Dim	.....#127 Arabic	Major 3- 6- 6	..... 8
m -1-1-	(1)	.....130 Dorian 8-Tone #2	Major 3- 7- 7	..... 8
m - $\frac{1}{2}$ -1-	(2)	.....126 Composite #2	Major 3- 5- 6- 6 7-	..... 8
m -1- $\frac{1}{2}$ -	(2)	.....128 Aeolian 8-Tone #2	Major 3- 6- 6 7-	..... 8
m -1-	(3)	..... 48 Ptolemy's	Major 3- 6- 6 7omit	... 7
m -1- $\frac{1}{2}$ -	(7)	.....129 Isfahan	Major 3- 6- 7- 7	.... 8
m -	(9)	..... 94 Hungarian	Major 3- 7omit	..... 6
m -	(11)	..... 92 Greek	Major 3- 6omit 7-	..... 6
m - $\frac{1}{2}$ -	(13) - W..	151 Armenian, Anct. Ch. ..**Major	3- 5- 7- 8- 9- 10- 11 ..	10
m - $\frac{1}{2}$ -	(14)	..... 46 Zangula	Major 3- 5- 7-	..... 7
m -	(16)	..... 90 Aeolian 6-Tone	Major 3- 5omit 6- 7-	..... 6
m - $\frac{1}{2}$ -	(d)	..... 38 Conway's 7-Tone	Major 3- 4 4+ 6omit	..... 7
m -	(h)	..... 93 Glinka's	Major 3- 6- 7omit	..... 6
[m/M] -1-	M	..... 35 Arezzo	*Major [3-/3]	..... 7
[m/M] -1-	m	..... 36 Basque	*Major [3-/3] 7-	..... 7
[m/M] -	(9)	..... 87 Appalachian	*Major [3-/3] 7omit	..... 6
[m/mN] -	(11)	..... 64 Appalachian	*Major [2-/2] 3- 6om 7-	... 6
[m/(8) -1/ $\frac{1}{2}$ -]	m	..... 39 Turkish	*Major 3- [4/4+] 7-	..... 7

--- mN ---

mN -1-	M	..... 6 Neapolitan-Major	Major 2- 3-	..... 7
mN -1-	m	..... 16 Javanese	Major 2- 3- 7-	..... 7
mN -1-	mN	..... 15 Phrygian	Major 2- 3- 6- 7-	..... 7
mN - $\frac{1}{2}$ - $\frac{1}{2}$ -	mN	.....114 Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-	... 8
mN -1-	mH	..... 14 Neapolitan-minor	Major 2- 3- 6-	..... 7
mN - $\frac{1}{2}$ -	W	..... 12 Locrian	Major 2- 3- 5- 6- 7-	... 7
mN - $\frac{1}{2}$ -1-	Dim	.....115 Zirafkand	Major 2- 3- 5- 6- 6	..... 8
mN -	(h)	..... 74 Samanta	Major 2- 3- 6- 7om	... 6
mN -1- $\frac{1}{2}$ -	(2)	.....117 Phrygian 8-Tone #2	Major 2- 3- 6- 6 7-	... 8
mN - $\frac{1}{2}$ -1-	(7)	.....116 'Iraq	Major 2- 3- 5- 6- 7- 7	... 8
mN -	(9)	..... 76 African	Major 2- 3- 7omit	..... 6
mN - $\frac{1}{2}$ -	(14)	..... 13 Hijazi	Major 2- 3- 5- 7-	..... 7
mN -	(16)	..... 72 Phrygian 6-Tone	Major 2- 3- 5om 6- 7-	... 6
mN -	(18)	..... 70 Gurjari	Major 2- 3- 5om 6-	..... 6
mN -	(x-12)	...160 Javanese	Major 2- 3- 5om 6- 7om	... 5
[mN/m] -	(11)	..... 64 Appalachian	*Major [2-/2] 3- 6om 7-	... 6
[mN/mH] -1-	mN	..... 7 Polish	*Major 2- [3-/3] 6- 7-	.... 7

--- mH ---

mH -1-	M	..... 2 Ananda	Major 2-	..... 7
mH - $\frac{1}{2}$ - $\frac{1}{2}$ -	M	.....118 Buzurg	Major 2- 4 4+	..... 8

(mH cont'd)

*Combination Scale

(cont'd)

**more than an octave

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
mH -1-	m	#33 Arabic	Major 2-	7-
mH -1-	mN	31 Spanish	Major 2-	6- 7-
mH -1-	mH	30 Double Harmonic	Major 2-	6-
mH - $\frac{1}{2}$ -	W	27 Rahawi	Major 2-	5- 6- 7-
mH - $\frac{1}{2}$ -1-	Dim	120 Irak	Major 2-	5- 6- 6
mH -	Aug	82 6-Tone Symmetrical	Major 2-	5+ 7omit
mH -1 $\frac{1}{2}$ -	(7)	24 Enigmatic, Des-Inv...	Major 2-	5+ 6+
mH - $\frac{1}{2}$ -	(10)	26 Persian	Major 2-	5- 6-
mH -	(11)	84 Greek	Major 2-	6om 7-
mH - $\frac{1}{2}$ -	(14)	28 Oriental	Major 2-	5- 7-
mH - $\frac{1}{2}$ -	(15)	23 Chrom. Lydian,Asc	Major 2-	5-
mH -	(h)	83 Bangala	Major 2-	6- 7omit
[mH/mN] -1-	mN	7 Polish	*Major 2-	[3-/3] 6- 7-
--- W ---				
W - $\frac{1}{2}$ -	M	51 Lydian	Major 4+	
W - $\frac{1}{2}$ -	m	55 Overtone	Major 4+	7-
W - $\frac{1}{2}$ -	mN	54 Lydian-minor	Major 4+	6- 7-
W -1-	Dim	52 Lydian-Augmented	Major 4+	5+
W - $\frac{1}{2}$ - $\frac{1}{2}$ -	Dim	132 Hindu	Major 4+	6- 6
W -	W	97 Whole Tone	Major 4+	5+ 6+ 7omit
W -	(4)	99 Lydian 6-Tone	Major 4+	7omit
W -1-	(7)	53 Leading Whole-Tone...	Major 4+	5+ 6+
W -	(14)	98 Prometheus	Major 4+	5om 7-
W -	(x-14)	193 Jazz Pentatonic	Major 4om	5- 6om 7-
--- Dim ---				
Dim - $\frac{1}{2}$ -1-	m	112 Latin American	Major 2-	3- 3 7-
Dim -1- $\frac{1}{2}$ -	m	109 Diminished #2	Major 2-	3- 3 4+ 7-
Dim -1 $\frac{1}{2}$ -	mN	11 Byzantine	Major 2-	3- 4- 6- 7-
Dim - $\frac{1}{2}$ -1-	mN	111 Spanish 8-Tone	Major 2-	3- 3 6- 7-
Dim -1- $\frac{1}{2}$ -	mN	113 Composite #1	Major 2-	3- 4- 5- 5 6-7-
Dim -1-	W	8 Super-Locrian	Major 2-	3- 4- 5- 6- 7-
Dim - $\frac{1}{2}$ - $\frac{1}{2}$ -	W	110 Espla's	Major 2-	3- 3 5- 6- 7-
Dim - Dim -	Dim	137 Tcherepnin's	Major 1	1+ 2+ 5 5+
--- Aug ---				
Aug -	mH	80 Augmented	Major 2+	4omit 6-
Aug -	(x-10)	174 Pentatonic-Domin.	Major 2+	4om 6om 7-

*Combination Scale

(cont'd)

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
--- (1) ---				
(1) -1-1- mN	#106	Phrygian 8-Tone #1 ..	Major 2- 2 3- 6- 7-	8
(1) - (7) - mN	138	Locrian 9-Tone	Major 2- 2 3- 5- 5 6-7- ...	9
(1) -1- $\frac{1}{2}$ - W	105	Locrian 8-Tone #1 ...	Major 2- 2 3- 5- 6- 7-	8
(1) - M - (2)	139	Phrygian 9-Tone	Major 2- 2 3- 6- 6 7-	9
--- (2) ---				
(2) - $\frac{1}{2}$ -1- M	104	Hindu	Major 2- 2	8
(2) -1- $\frac{1}{2}$ - M	107	Hindu	Major 2- 2 4+	8
(2) - (1) - M	140	Hindu	Major 2- 2 4 4+	9
(2) - (7) - Dim	141	Hindu	Major 2- 2 4+ 6- 6	9
--- (3) ---				
(3) -1- (3)	4	Chrom. Dorian,Asc. ..	Major 2- 2 3om 6- 6 7om ...	7
(3) - $\frac{1}{2}$ - (5)	3	Chrm. Mixolyd.,Asc ..	Major 2- 2 3+ 4+ 6+ 7om ...	7
--- (4) ---				
(4) - $\frac{1}{2}$ - mH	10	Raga Todi	Major 2- 3- 4+ 6-	7
(4) - W	68	Locrian 6-Tone	Major 2- 3- 4om 5- 6- 7- ..	6
(4) - (10)	67	Vilasakhani	Major 2- 3- 4+ 5om 6-	6
(4) - (14)	69	Hidshaf	Major 2- 3- 4om 5- 7-	6
(4) - (x-8)	153	Semitonal Pent. #4 ..	Major 2- 3- 4+ 5om 6- 7om .	5
--- (5) ---				
(5) - $\frac{1}{2}$ - M	17	Marava	Major 2- 4+	7
(5) - $\frac{1}{2}$ - M + 1	119	Scotch Bagpipe tuning	Major 2- 4+ 9	8
(5) - $\frac{1}{2}$ - m	21	India	Major 2- 4+ 7-	7
(5) - $\frac{1}{2}$ - mH	20	Chrm.Hypolydian,Asc .	Major 2- 4+ 6-	7
(5) -1- (7)	19	Enigmatic, Asc.	Major 2- 4+ 5+ 6+	7
(5) - (14)	79	Prometheus-Neapol. ..	Major 2- 4+ 5om 7-	6
(5) - (15)	78	Panchana	Major 2- 4+ 5om	6
(5) - (a)	81	Combined-Altered	Major 2- 4+ 6- 7om	6
(5) - (x-11)	172	Vibhasa	Major 2- 4+ 5om 7om	5
(5) - (x-14)	170	Jazz Dominant Pent...	Major 2- 4om 5- 6om 7-	5

(cont'd)

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# or Tones
--- (6) ---				
(6) - (x-4)	175	Rewa	Major 2- 4om 6- 7om	5
(6) - (x-7)	177	Scriabin	Major 2- 4om 7om	5
(6) - (x-10)	176	Dominant-Pentatonic	Major 2- 4om 6om 7-	5
--- (7) ---				
(7) - (1) - M	143	Bartok's 9-Tone	Major 3- 3 5- 5	9
(7) - $\frac{1}{2}$ -1- m	123	Dorian 8-Tone #1	Major 3- 3 7-	8
(7) -1- $\frac{1}{2}$ - m	121	Jobim's	Major 3- 3 4+ 7-	8
(7) (1) m	142	Auxiliary Blues	Major 3- 3 4 4+ 7-	9
(7) -1 $\frac{1}{2}$ - mN	43	Greek	Major 3- 4- 6- 7-	7
(7) - $\frac{1}{2}$ -1- mN	122	Aeolian 8-Tone #1	Major 3- 3 6- 7-	8
(7) -1- $\frac{1}{2}$ - W	108	Portuguese	**Major 2 2+ 4+ 8+	8
(7) - mN - (1)	145	Dorian 9-Tone	Major 3- 3 7- 7	9
(7) - Dim - (2)	144	Aeolian 9-Tone	Major 3- 3 6- 6 7-	9
(7) -1 $\frac{1}{2}$ - (3)	41	Chrm.Hypodorian,Asc	Major 3- 4- 6- 6 7om	7
--- (8) ---				
(8) - $\frac{1}{2}$ - M	37	Lydian-Dim.	Major 3- 4+	7
(8) - $\frac{1}{2}$ - m	44	Roumanian-minor	Major 3- 4+ 7-	7
(8) - $\frac{1}{2}$ - mN	42	Greek	Major 3- 4+ 6- 7-	7
(8) - $\frac{1}{2}$ - mH	40	Hungarian-minor	Major 3- 4+ 6-	7
(8) - $\frac{1}{2}$ - mH - m	150	Algerian	**Major 3- 4+ 6- 9 10- 11	10
[(8)/m - $\frac{1}{2}$ /1-) m	39	Turkish	Major 3- (4+/4) 7-	7
--- (9) ---				
(9) - M	96	Scotch	Major 4omit	6
(9) - [M/m]	101	Appalachian	*Major 4omit [7-/7]	6
(9) - m	100	Scotch	Major 4omit 7-	6
(9) - (x-4)	195	Japanese Pent. #1	Major 4omit 6- 7omit	5
(9) - (x-7)	197	Pentatonic #3	Major 4omit 7omit	5
(9) - (x-10)	196	African	Major 4omit 6omit 7-	5
(9) - (x-13)	194	India	Major 4omit 6omit	5
--- (10) ---				
(10) - (x-14)	188	Japanese Pent. #2	Major 3omit 5- 6omit 7-	5

*Combination Scale

(cont'd)

**more than an octave

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
--- (11) ---				
(11) - M	.....#86	Ionian 6-Tone	..... Major 3omit	..... 6
(11) - m	..... 95	Appalachian	..... Major 3omit 7-	..... 6
(11) - mH	..... 91	Armenian, Anct. Ch.	..... Major 3omit 6-	..... 6
(11) - (x-4)	....190	Kumoi #4	..... Major 3omit 6- 7omit	..... 5
(11) - (x-7)	....192	Pentatonic #1	..... Major 3omit 7omit	..... 5
(11) - (x-10)	...191	Pentatonic #4	..... Major 3omit 6omit 7-	.... 5
(11) - (x-13)	...189	Semitonal Pent. #5	.. Major 3omit 6omit	..... 5
--- (13) ---				
(13) -1- m	..... 32	Roumanian-Major	..... Major 2+ 7-	..... 7
(13) -1 $\frac{1}{2}$ - (2)	..... 29	Persian	..... Major 2+ 5+ 7-	..... 7
(13) - $\frac{1}{2}$ - (5)	..... 18	Blues	..... Major 2+ 4 4+ 6omit 7-	.... 7
(13) -1 $\frac{1}{2}$ - (7)	..... 25	Chrm.Phrygian,Asc	... Major 2+ 5+ 6+	..... 7
[(13)/M] -1- m	..... 5	Jewish	..... *Major [2/2+] 7-	..... 7
--- (14) ---				
(14) - $\frac{1}{2}$ - m	..... 22	Hungarian-Major	..... Major 2+ 4+ 7-	..... 7
(14) - (x-14)	.....169	Dimin. Pentatonic	... Major 2+ 4om 5- 6om 7-	.... 5
--- (15) ---				
(15) - (5)	..... 66	Blues	..... Major 2om 3- 4 4+ 6om 7-	.. 6
(15) - $\frac{1}{2}$ - (13)	..... 9	Chrm.Hypophryg.,Asc	... Major 2+ 3+ 4+ 6+	..... 7
(15) - (x-14)	...159	Kumoi #5	..... Major 2om 3- 5- 6om 7-	.... 5
--- (16) ---				
(16) - M	..... 65	African	..... Major 2om 3-	..... 6
(16) - m	..... 77	Dorian 6-Tone	..... Major 2om 3- 7-	..... 6
(16) - mN	..... 75	Irish	..... Major 2om 3- 6- 7-	..... 6
(16) - (x-7)	.....166	Jazz minor Pent.	.... Major 2om 3- 7om	..... 5
(16) - (x-10)	.....164	Pentatonic #2	..... Major 2om 3- 6om 7-	..... 5
--- (17) ---				
(17) - (x-6)	.....158	Pentatonic #5	..... Major 2om 3- 5om 6- 7-	.... 5
--- (19) ---				
(19) - (x-6)	.....154	Japanese	..... Major 2om 3- 4om 6- 7-	.... 5

*Combination Scale

(cont'd)

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
--- (b) ---				
(b) - (x-4)	#155	Pelog #1	Major 2- 3- 4om 6- 7om	.... 5
--- (d) ---				
(d) - W	71	Abuselik	Major 2- 3om 5- 6- 7-	.... 6
(d) - (x-8)	156	Pelog #4	Major 2- 3om 5- 6- 7om	... 5
(d) - (x-14)	157	Hirajoshi #2	Major 2- 3om 5- 6om 7-	.... 5
--- (e) ---				
(e) - mN	73	In Scale	Major 2- 3om 6- 7-	..... 6
(e) - (x-4)	162	Hirajoshi #4	Major 2- 3om 6- 7om	..... 5
(e) - (x-7)	165	Japanese Pent. #4 ..	Major 2- 3om 7om	..... 5
(e) - (x-10)	163	Kumoi #2	Major 2- 3om 6om 7-	..... 5
--- (h) ---				
(h) - m	88	Akebono	Major 3- 4om 7-	..... 6
(h) - (x-4)	184	Hirajoshi #1	Major 3- 4om 6- 7om	..... 5
(h) - (x-7)	186	Kumoi #1	Major 3- 4om 7om	..... 5
(h) - (x-10)	185	African	Major 3- 4om 6om 7-	..... 5
--- (k) ---				
(k) - m	89	Overtone 6-Tone	Major 3om 4+ 7-	..... 6
(k) - (x-7)	187	Semitonal Pent. #2 .	Major 3om 4+ 7om	..... 5
(k) - (x-13)	183	Pelog #2	Major 3om 4+ 6om	..... 5
--- (p) ---				
(p) - (x-6)	171	Japanese Pent. #3 ..	Major 2+ 4om 5+ 6+ 7om	.... 5
--- (q) ---				
(q) - (x-2)	161	Semitonal Pent. #1 .	Major 2om 3- 5om 7-	..... 5
--- (u) ---				
(u) - m	85	Polish	Major 2om 7-	..... 6
(u) - (x-7)	182	Bulgarian	Major 2om 7om	..... 5
(u) - (x-10)	181	Semitonal Pent. #3 .	Major 2om 6om 7-	..... 5
(u) - (x-13)	180	Pelog #5	Major 2om 6om	..... 5

(cont'd)

Chart #15: Scales by 1st Tetrachord (Formula) (cont'd)

Formula	#	Name	Symbol	# of Tones
--- (y) ---				
(y) - (x-2)	.....#179	Pelog #3	..... Major 2om 5om 7-	..... 5
(y) - (x-5)	..... 178	Hirajoshi #3	..... Major 2om 5om	..... 5
--- (z) ---				
(z) - (x-13)	..... 173	Hirajoshi #5	..... Major 2om 4+ 6om	..... 5
--- (aa) ---				
(aa) - (x-9)	..... 168	Japanese Pent. #5	... Major 2om 4+ 5+ 6om	..... 5
--- (bb) ---				
(bb) - (x-5)	..... 167	Kumoi #3	..... Major 2om 4+ 5om	..... 5

End of Chart #15

CHAPTER 10

SIX MISCELLANEOUS CHARTS

WITH SPECIFIC PURPOSES

CONTENTS OF CHAPTER 10:

A Few Words About "Spelling"	Page 123
Chart #16: Correct Spelling of Certain Scales	123
Chart #17: Today's Spelling of 4 Ancient Greek Scales	123
What Is a Combination Scale?	124
Chart #18: Combination Scales	124
A Few Words About Scales That Differ Ascending & Descending	125
Chart #19: Scales That Differ Ascending & Descending	125
A Few Words About Scales Differing Above or Below the Octave	127
Chart #20: Scales That Differ Above or Below the Octave	127
A Few Words Regarding Scale Names I Made Up	128
Chart #21: Scale Names I "Made Up"	128

NOTE: These six charts contain only scales of this book that have the specific characteristic that is listed in each specific chart. There have to be many more scales that would fit into each of these categories (except Chart #21), but these scales in all except Chart #19 are all that I was able to locate.

NOTE: The scales in these six charts are given with their Scale Numbers (#1 - #198), allowing for reference to The Grand Finale (starting on page 405) for more information about each scale.

A FEW WORDS ABOUT SPELLING

Spelling in regard to scales has to do with which *notes* (*not* intervals) are involved in that particular scale. For example, on the piano one single black key represents both D# and E♭. Which should it be called in a certain scale? Whether to call it D# or E♭ refers to how the scale will be "spelled".

Since one of the reasons for this book is to present scales in an easily understood way, the liberty has been taken to change the "spelling" of a few scales. This was done to make the scales (at least in my opinion) easier to "see".

The following two charts have to do with the spelling of a few scales. The first chart gives the "correct spelling" of 14 scales, along with the spelling used in this book. The second chart shows how four of the ancient Greek scales would probably be "spelled" today. I think that most people would agree that "my spelling" would be easier to use, but for the purist, the "real" spellings are given.

"CORRECT" SPELLING OF CERTAIN SCALES CHART #16

#	NAME	SPELLING USED IN BOOK	CORRECT SPELLING
80	Augmented	Major 2+ 4omit 6-	Major 2om 3- 3 4om 5 5+ 6om
105	Locrian 8-Tn #1	Major 2- 2 3- 5- 6- 7-	Major 2- 3♭♭ 3- 5- 6- 7-
107	Hindu	Major 2- 2 4+	Major 1 1+ 4+
109	Diminished #2	Major 2- 3- 3 4+ 7-	Major 1 1+ 2+ 4+ 7-
117	Phrygian 8-Tn #2	Major 2- 3- 6- 6 7-	Major 2- 3- 6- 7♭♭ 7-
122	Aeolian 8-Tn #1	Major 3- 3 6- 7-	Major 3- 4- 4 6- 7-
125	Diminished #1	Major 3- 5- 6- 6	Major 3- 5- 6- 7♭♭ 8- 8
130	Dorian 8-Tn #2	Major 3- 7- 7	Major 3- 7- 8- 8
138	Locrian 9-Tone	Major 2- 2 3- 5- 5 6- 7-	Major 2- 3♭♭ 3- 5- 5 6- 7-
139	Phrygian 9-Tone	Major 2- 2 3- 6- 6 7-	Major 2- 2 3- 6- 7♭♭ 7-
141	Hindu	Major 2- 2 4+ 6- 6	Major 1 1+ 4+ 6- 6
144	Aeolian 9-Tone	Major 3- 3 6- 6 7-	Major 3- 4- 4 6- 6 7-
145	Dorian 9-Tone	Major 3- 3 7- 7	Major 3- 3 7- 8- 8
177	Scriabin, Son. #7	Major 2- 4omit 7omit	Major 1 1+ 2om 4om 7om

TODAY'S SPELLING OF 4 ANCIENT GREEK SCALES CHART #17

#	NAME	SPELLING USED IN BOOK	TODAY'S SPELLING
3	Chr. Mixolydian, Asc. .	Major 2- 2 3+ 4+ 6+ 7omit	Major 2- 3♭♭ 5- 6♭♭ 7-
4	Chrm. Dorian, Asc. . .	Major 2- 2 3om 6- 6 7om	Major 2- 3♭♭ 6- 7♭♭
41	Chr. Hypodorian, Asc. .	Major 3- 4- 6- 6 7omit	Major 3- 4- 6- 7♭♭
48	Ptolemy's	Major 3- 6- 6 7omit	Major 3- 6- 7♭♭

WHAT IS A COMBINATION SCALE?

A Combination Scale is any scale with a "consistent inconsistency" on one particular point of the scale. The two tones (for example, a neutral third scale point and a flatted third scale point, as in Scales # 7, 35, 36, and 87, below) are used interchangeably, but they are never used consecutively. For instance, in the Scale #36 on the chart below, the scale fluctuates between the Dorian and the Mixolydian Scales (two of the Diatonic Modes), having always a flatted 7th Scale Point Tone, but sometimes flatting the 3rd Scale Point Tone and sometimes having a neutral 3rd.

This fluctuation of notes is shown in this book by putting the two notes together in brackets, separating them by a slash: [3-/3]. The fluctuating intervals are also shown by putting them both ways within brackets, separated by a slash: [1-1- $\frac{1}{2}$ /1- $\frac{1}{2}$ -1]-1-1- $\frac{1}{2}$ -1. On the staff, the fluctuating notes are connected with a slur: ~

Remember that the Scale Number can be used to look up a particular scale for more information in The Grand Finale, which starts on page 405.

COMBINATION SCALES

CHART #18

#	SYMBOL	NAME	SCALES IT COMBINES
*5	Major [2/2+] 7-	Jewish	#32 & #62
7	Major 2- [3-/3] 6- 7-	Polish	#15 & #31
35	Major [3-/3]	Arezzo	#1 & #34
36	Major [3-/3] 7-	Basque	#50 & #62
39	Major 3- [4/4+] 7-	Turkish	#44 & #50
63	Major [7-/7]	Negro Spiritual	#1 & #62
64	Major [2-/2] 3- 6omit 7-	Appalachian	#92 & #--
87	Major [3-/3] 7omit	Appalachian	#94 & #103
101	Major 4omit [7-/7]	Appalachian	#96 & #100
124	Major 3- 4 4+ [6-/6]	Conway's 8-Tone	#-- & #--

*Use Scale Numbers to look up individual scales for more information in The Grand Finale, starting on page 405

A FEW WORDS ABOUT SCALES THAT DIFFER ASCENDING AND DESCENDING

Some scales have different intervals when they descend than when they ascend. There must be many scales that do this, especially the older ethnic scales

In fact, in Danielou #2 (see the Bibliography), almost every scale he listed differed ascending and descending. Often one interval would be a half step ascending and a whole step descending. Sometimes Danielou would have a 5-Tone Scale ascending and a similar but 6-Tone Scale descending. But I decided that this book wasn't the place to list them all. So I include one from his book (the Hindustan scale shown below) and then list some others I found elsewhere.

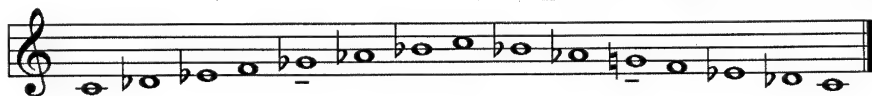
Remember, the Scale Numbers may be used to look up each scale for more details in The Grand Finale, which starts on Page 405.

NOTE: The differences between the ascending and descending scales are shown below with a dash (-) either over or under the notes that differ in the two scales.

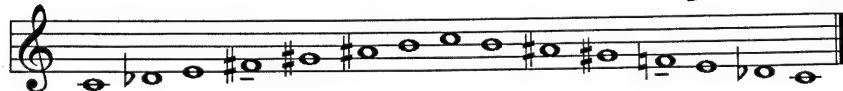
SCALES THAT DIFFER ASCENDING & DESCENDING

CHART #19

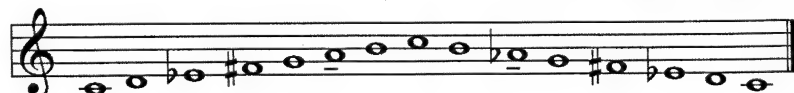
When used as a Portuguese Scale: Ascending: #12 Locrian
Descending: #15 Phrygian



When Verdi used his Enigmatic Scale: Ascending: #19 Enigmatic, Asc.
Descending: #24 Enigmatic, Des-Inv

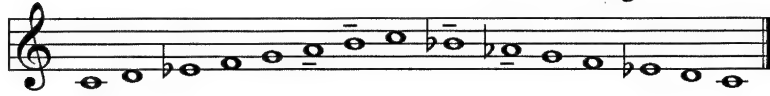


When used as a Jewish Scale: Ascending: #37 Lydian-Diminished
Descending: #40 Hungarian-minor

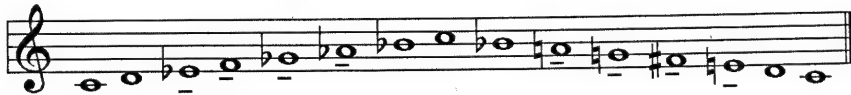


When used as a Jazz Scale, the Melodic Minor (#34) is played the same ascending and descending. However, other than in jazz, often the Melodic Minor Scale is played:

Ascending: #34 Melodic Minor
Descending: #49 Natural Minor



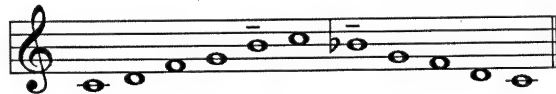
Bartok's Acoustic Scale is played: Ascending: #45 Half-Diminished
Descending: #55 Overtone



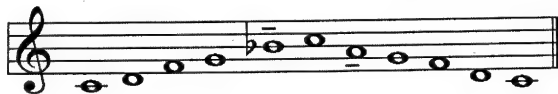
When used as the Japanese In-sen Scale: Ascending: #163 Kumoi #2
Descending: #162 Hirajoshi #4



When used as a Hindustan Scale: Ascending: #189 Semitonal Pent. #5
Descending: #191 Pentatonic #4



When used as the Japanese Yo-sen Scale: Ascending: #191 Pentatonic #4
Descending: #192 Pentatonic #1



A FEW WORDS ABOUT SCALES THAT DIFFER ABOVE OR BELOW THE OCTAVE

Sometimes a scale will play different notes above the octave or below the octave than the notes that are played *within* the octave. It seems that often in ancient music the scale wasn't a scale as we know scales, but there were, instead groups of tetrachords. Tetrachord A would be followed by Tetrachord B, which would be followed by Tetrachord C, which, in turn would be followed by Tetrachord D. Other times a scale would have a changed leading tone (the note just below the first note of the scale) so as to lead into the first note of the scale better.

There were probably many, many scales with notes that differed above or below the octave from the notes that were within the octave. However, the scales listed below were the only scales of that kind that I was able to locate in source materials. It is often thought, though, that the Diatonic Modes all, at one period, had leading tones. The Diatonic Modes that don't naturally in their basic scale have a leading tone, are placed as the last four scales in the following list.

Remember, the Scale Number can be used to look up a particular scale in The Grand Finale (which starts on page 405) and get more information about that scale.

SCALES THAT DIFFER ABOVE OR BELOW THE OCTAVE

CHART #20

#	NAME	SYMBOL
*119	Scotch Bagpipe Tuning	Major 2- 4+ 9
135	Magon Abot (Jewish)	Major low 7, 3- 6- 7-
146	Armenian, Ancient Church	Major 3- 7- 9- 10-
148	Tudor Scale	Major low 6 7, high 3- 6- 7-
149	Adonai Malakh (Jewish)	Major low 6 7, high 7-
150	Algerian	Major 3- 4+ 6- 9 10- 11
151	Armenian, Ancient Church	Major 3- 5- 7- 8- 9- 10- 11
152	Russian liturgical	Major 7- 9 10- 11

Possible Diatonic Mode Variations:

15	Phrygian	Major low 7, 2- 3- 6- 7-
49	Aeolian (Natural minor) (See #135 & 148, above) ...	Major low 7, 3- 6- 7-
50	Dorian	Major low 7, 3- 7-
62	Mixolydian (see #149, above)	Major low 7, high 7-

*Use Scale Numbers to look up scales in The Grand Finale, starting on page 405

A FEW WORDS REGARDING SCALE NAMES I "MADE UP"

In my source books there were ten different 6-Tone Scales whose only names were "Appalachian" and "Anglo-American", used interchangeably; and there were five different 6-Tone Scales with only the names of "Scotch"**. In addition, there were 13 different 8-Tone Scales and six different 9-Tone Scales with only the name of "Hindu", making a total of 18 different scales with only the name of "Hindu"! I found this very confusing; it was difficult to try to keep the scales straight in my mind.

Therefore, I took the liberty of making up some logical names for five of the Appalachian scales, three of the Scotch scales, and thirteen of the Hindu Scales. All 21 of these names that I made up were approved by Mr. Bud Conway before I used them in this book. Interestingly enough, all except one of these scales were alterations of one of the Diatonic Modes.

In the following chart is a list of my "made up" names. Remember, the Scales Numbers can be used to get more information on each individual scales by looking it up by its Number in The Grand Finale, which starts on page 405.

SCALE NAMES I "MADE UP" CHART #21

For Scales With Only The Name "SCOTCH"**:

- *#68 Locrian 6-Tone
- #72 Phrygian 6-Tone
- #89 Overtone 6-Tone

For Scales With Only The Names "APPALACHIAN" and "ANGLO-AMERICAN":

- | | |
|-------------------|------------------------|
| #77 Dorian 6-Tone | #99 Lydian 6-Tone |
| #86 Ionian 6-Tone | #102 Mixolydian 6-Tone |
| #90 Aeolian 6-Ton | |

For Scales With Only The Name "HINDU":

8-Tone Scales:

- | | |
|-------------------------|------------------------|
| #105 Locrian 8-Tone #1 | #123 Dorian 8-Tone #1 |
| #106 Phrygian 8-Tone #1 | #128 Aeolian 8-Tone #2 |
| #114 Locrian 8-Tone #2 | #130 Dorian 8-Tone #2 |
| #117 Phrygian 8-Tone #2 | #136 Mixolydian 8-Tone |
| #122 Aeolian 8-Tone #1 | |

9-Tone Scales:

- | | |
|----------------------|---------------------|
| #138 Locrian 9-Tone | #144 Aeolian 9-Tone |
| #139 Phrygian 9-Tone | #145 Dorian 9-Tone |
-

*Use Scale Numbers to look up scales in The Grand Finale, page 405

**My sources said "Scotch", not "Scots", so I am using what they said.

SECTION C

SCALE CHARTS BY SEPARATE TONE GROUPS

CONTENTS OF SECTION C

Chapter 11: Charts of 5-Tone Scales Only (Scales #153 - #198)	Page 131
Chapter 12: Charts of 6-Tone Scales Only (Scales #64 - #103)	147
Chapter 13: Charts of 7-Tone Scales Only (Scales #1 - #63)	159
Chapter 14: Charts of 8-Tone Scales Only (Scales #104 - #136)	173
Chapter 15: Charts of 9-Tone Scales (Scales #137 - #149) & 10-Tone Scales Only (Scales #150 - #152)	181

NOTE: I am well aware that all of the charts in this Section are repeats of portions of charts found elsewhere in this book. However, as I worked with the charts myself in the early stages of this book, I had found myself wanting all of the charts of one tone-group (all of the 5-Tone Scales or all of the 8-Tone Scales, etc.) together in one spot -- not all of the time, just part of the time. The only solution I could see was to have the charts in two places, once with all of the tone groups together as a whole, and then once again with the tone groups separately. Hence Section C!

A FEW PRELIMINARIES REGARDING 5-TONE SCALES

Definition of a 5-Tone Scale:

A 5-Tone Scale is a scale made up of one tetrachord and one conjunct (overlapping) trichord. There are 5 *different* notes (tones) plus the "octave note".

Example of a 5-Tone Scale:

C - D - F - G \flat - B \flat - c	= Notes involved
\downarrow \downarrow \downarrow \downarrow \downarrow 1 - 1 $\frac{1}{2}$ - $\frac{1}{2}$ - 2 - 1	= Intervals involved
 (10) - (x-14)	= Tetrachord & trichord involved (see page 24)

Therefore: The SYMBOL = Major 3omit 5- 6omit 7- or
 Major 3omit 6omit 5- 7-

The FORMULA = (10) - (x-14)

and these identify: Scale #188, Japanese Pentatonic #2

What is in Chapter 11:

There are five charts in Chapter 11. These five charts each contain a total of 45 different 5-Tone Scales (all of the 5-Tone Scales in this book) showing different aspects of the scales. Each 5-Tone Scale appears on each chart.

NOTE: "om" is used as an abbreviation of "omit" to save space

NOTE: Each scale can be looked up by its Scale Number (#1 - #198) in The Grand Finale which contains all of the information that I have in this book about each scale. The Grand Finale starts on page 629 for 5-Tone Scales (#153 - #198).

**5-TONE SCALES IN NUMERICAL* ORDER BY ALTERED SCALE POINT
(by SYMBOL)**

CHART #22

*#	NAME	SYMBOL
---2---		
*#153	Semitonal Pentatonic #4	Major 2- 3- 4+ 5om 6- 7om
154	Japanese	Major 2om 3- 4om 5- 6- 7-
155	Pelog #1	Major 2- 3- 4om 5- 6- 7om
156	Pelog #4	Major 2- 3om 5- 6- 7om
157	Hirajoshi #2	Major 2- 3om 5- 6om 7-
158	Pentatonic #5	Major 2om 3- 5om 6- 7-
159	Kumoi #5	Major 2om 3- 5- 6om 7-
160	Javanese	Major 2- 3- 5om 6- 7om
161	Semitonal Pentatonic #1	Major 2om 3- 5om 7-
162	Hirajoshi #4	Major 2- 3om 6- 7om
163	Kumoi #2	Major 2- 3om 6om 7-
164	Pentatonic #2	Major 2om 3- 6om 7-
165	Japanese Pentatonic #4	Major 2- 3om 7om
166	Jazz minor Pentatonic	Major 2om 3- 7om
167	Kumoi #3	Major 2om 4+ 5om
168	Japanese Pentatonic #5	Major 2om 4+ 5+ 6om
169	Diminished Pentatonic	Major 2+ 4om 5- 6om 7-
170	Jazz Dominant Pentatonic	Major 2- 4om 5- 6om 7-
171	Japanese Pentatonic #3	Major 2+ 4om 5+ 6+ 7om
172	Vibhasa (Hindu)	Major 2- 4+ 5om 7om
173	Hirajoshi #5	Major 2om 4+ 6om
174	Pentatonic-Dominant	Major 2+ 4om 6om 7-
175	Rewa (Hindu)	Major 2- 4om 6- 7om
176	Dominant Pentatonic	Major 2- 4om 6om 7-
177	Scriabin	Major 2- 4om 7om
178	Hirajoshi #3	Major 2om 5om
179	Pelog #3	Major 2om 5om 7-
180	Pelog #5	Major 2om 6om
181	Semitonal Pentatonic #3	Major 2om 6om 7-
182	Bulgarian	Major 2om 7om

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 629
for 5-Tone Scales

(cont'd)

Chart #22: 5-Tone Numerically* (with Symbol) (cont'd)

*#	Name	Symbol
---3---		
*#183	Pelog #2	Major 3om 4+ 6om
184	Hirajoshi #1	Major 3- 4om 6- 7om
185	African	Major 3- 4om 6om 7-
186	Kumoi #1	Major 3- 4om 7om
187	Semitonal Pentatonic #2	Major 3om 4+ 7om
188	Japanese Pentatonic #2	Major 3om 5- 6om 7-
189	Semitonal Pentatonic #5	Major 3om 6om
190	Kumoi #4	Major 3om 6- 7om
191	Pentatonic #4	Major 3om 6om 7-
192	Pentatonic #1	Major 3om 7om
---4---		
*#193	Jazz Pentatonic	Major 4om 5- 6om 7-
194	India	Major 4om 6om
195	Japanese Pentatonic #1	Major 4om 6- 7om
196	African	Major 4om 6om 7-
197	Pentatonic #3	Major 4om 7om
---5---		
*#198	African	Major 5 omit 7 omit

*Use Scale Numbers to locate scales in
The Grand Finale, starting page 629
for 5-Tone Scales

End of Chart #22

**5-TONE SCALES BY OMITTED TONES FIRST,
THEN SCALE POINT ALTERATIONS**

CHART #23

SYMBOL										# NAME
---2 omit---										
Major	2omit	4omit	3-	5-	6-	7-	.	.	.	*#154 Japanese
Major	2omit	5omit	.	.	.	.	.	.	.	178 Hirajoshi #3
Major	2omit	5omit	3-		6-	7-	.	.	.	158 Pentatonic #5
Major	2omit	5omit	3-			7-	.	.	.	161 Semitonal Pentatonic #1
Major	2omit	5omit		4+	.	.	.	.	.	167 Kumoi #3
Major	2omit	5omit				7-	.	.	.	179 Pelog #3
Major	2omit	6omit	.	.	.	.	.	.	.	180 Pelog #5
Major	2omit	6omit	3-	5-		7-	.	.	.	159 Kumoi #5
Major	2omit	6omit	3-			7-	.	.	.	164 Pentatonic #2
Major	2omit	6omit		4+	.	.	.	.	.	173 Hirajoshi #5
Major	2omit	6omit		4+	5+	.	.	.	.	168 Japanese Pentatonic #5
Major	2omit	6omit				7-	.	.	.	181 Semitonal Pentatonic #3
Major	2omit	7omit	.	.	.	.	.	.	.	182 Bulgarian
Major	2omit	7omit	.	.	.	.	.	.	.	166 Jazz minor Pentatonic
---3 omit---										
Major	3omit	6omit	.	.	.	.	.	.	.	189 Semitonal Pentatonic #5
Major	3omit	6omit	2-	5-		7-	.	.	.	157 Hirajoshi #2
Major	3omit	6omit	2-			7-	.	.	.	163 Kumoi #2
Major	3omit	6omit		4+	.	.	.	.	.	183 Pelog #2
Major	3omit	6omit			5-	7-	.	.	.	188 Japanese Pentatonic #2
Major	3omit	6omit				7-	.	.	.	191 Pentatonic #4
Major	3omit	7omit	.	.	.	.	.	.	.	192 Pentatonic #1
Major	3omit	7omit	2-	.	.	.	.	.	.	165 Japanese Pentatonic #4
Major	3omit	7omit	2-	5-	6-	.	.	.	.	156 Pelog #4
Major	3omit	7omit	2-		6-	.	.	.	.	162 Hirajoshi #4
Major	3omit	7omit		4+	.	.	.	.	.	187 Semitonal Pentatonic #2
Major	3omit	7omit			6-	.	.	.	.	190 Kumoi #4

*Use Scale Numbers to locate scales in
The Grand Finale, starting page 629
for 5-Tone Scales

(cont'd)

Chart #23: 5-Tone Scales by Omitted Tones First (cont'd)

Symbol											#	Name
---4 omit---												
Major	4omit	6omit	.	.	.	.	.	.	.	.	*#194	India
Major	4omit	6omit	2-	5-	7-	.	.	.	.	.	170	Jazz Dominant Pentatonic
Major	4omit	6omit	2+	5-	7-	.	.	.	.	.	169	Diminished Pentatonic
Major	4omit	6omit	2+		7-	.	.	.	.	.	174	Pentatonic-Dominant
Major	4omit	6omit	2-		7-	.	.	.	.	.	176	Dominant Pentatonic
Major	4omit	6omit		3-	7-	.	.	.	.	.	185	African
Major	4omit	6omit			5-	7-	.	.	.	.	193	Jazz Pentatonic
Major	4omit	6omit			7-	.	.	.	.	.	196	African
Major	4omit	7omit	.	.	.	.	.	.	.	.	197	Pentatonic #3
Major	4omit	7omit	2-	.	.	.	.	.	.	.	177	Scriabin
Major	4omit	7omit	2-	3-	6-	.	.	.	.	.	155	Pelog #1
Major	4omit	7omit	2+		5+	6+	.	.	.	.	171	Japanese Pentatonic #3
Major	4omit	7omit	2-			6-	.	.	.	.	175	Rewa
Major	4omit	7omit		3-	.	.	.	.	.	.	186	Kumoi #1
Major	4omit	7omit		3-		6-	.	.	.	.	184	Hirajoshi #1
Major	4omit	7omit				6-	.	.	.	.	195	Japanese Pentatonic #1
---5 omit---												
Major	5omit	7omit	.	.	.	.	.	.	.	.	198	African
Major	5omit	7omit	2-	3-	4+	6-	.	.	.	.	153	Semitonal Pentatonic #4
Major	5omit	7omit	2-	3-		6-	.	.	.	.	160	Javanese
Major	5omit	7omit	2-		4+	.	.	.	.	.	172	Vibhase

*Use Scale Numbers to locate scales in
The Grand Finale, starting page 629
for 5-Tone Scales

End of Chart #23

**5-TONE SCALES NUMERICALLY
BY ONE NON-MAJOR SCALE SYMBOL EACH ****

CHART #24

#	NAME	ALTERNATE SYMBOL
*#153	Semitonal Pentatonic #4	*#10 Raga Todi 5 omit 7 omit
154	Japanese	#45 Half Diminished 2 omit 4 omit
155	Pelog #1	#14 Neapolitan-minor . . . 4 omit 7 omit
156	Pelog #4	#26 Persian 3 omit 7 omit
157	Hirajoshi #2	#28 Oriental 3 omit 6 omit
158	Pentatonic #5	#49 Natural minor 2 omit 5 omit
159	Kumoi #5	#46 Zangula 2 omit 6 omit
160	Javanese	#14 Neapolitan-minor . . . 5 omit 7 omit
161	Semitonal Pentatonic #1	#50 Dorian 2 omit 5 omit
162	Hirajoshi #4	#30 Double Harmonic . . . 3 omit 7 omit
163	Kumoi #2	#33 Arabic 3 omit 6 omit
164	Pentatonic #2	#50 Dorian 2 omit 6 omit
165	Japanese Pentatonic #4	#2 Ananda 3 omit 7 omit
166	Jazz minor Pentatonic	#34 Melodic minor 2 omit 7 omit
167	Kumoi #3	#51 Lydian 2 omit 5 omit
168	Japanese Pentatonic #5	#52 Lydian-Augmented . . 2 omit 6 omit
169	Diminished Pentatonic	#22 Hungarian-Major . . . 5 omit 6 omit
170	Jazz Dominant Pentatonic	#28 Oriental 4 omit 6 omit
171	Japanese Pentatonic #3	#25 Chrm. Phrygian 4 omit 7 omit
172	Vibhasa	#17 Marava 5 omit 7 omit
173	Hirajoshi #5	#51 Lydian 2 omit 6 omit
174	Pentatonic-Dominant	#32 Roumanian-Major . . . 4 omit 6 omit
175	Rewa	#30 Double Harmonic . . . 4 omit 7 omit
176	Dominant Pentatonic	#33 Arabic 4 omit 6 omit
177	Scriabin	#2 Ananda 4 omit 7 omit
178	Hirajoshi #3	(#1 Major 2 omit 5omit)
179	Pelog #3	#62 Mixolydian 2 omit 5 omit
180	Pelog #5	(#1 Major 2 omit 6omit)
181	Semitonal Pentatonic #3	#62 Mixolydian 2 omit 6 omit
182	Bulgarian	(#1 Major 2 omit 7omit)
183	Pelog #2	#51 Lydian 3 omit 6 omit

*Use Numbers to locate scales in The Grand Finale, starting on page 629

(cont'd)

**Some have more than one, but I chose just one.

See page 83 & Chart #13, page 85

Chart #24: 5-Tone Scales with One Non-Major Scale Symbol Each (cont'd)

#	Name	Alternate Symbol
*#184	Hirajoshi #1	*#47 Harmonic minor 4 omit 7 omit
185	African	#50 Dorian 4 omit 6 omit
186	Kumoi #1	#34 Melodic minor 4 omit 7 omit
187	Semitonal Pentatonic #2	#51 Lydian 3 omit 7 omit
188	Japanese Pentatonic #2	#58 Zenkla 3 omit 6 omit
189	Semitonal Pentatonic #5	(#1 Major 3 omit 6omit)
190	Kumoi #4	#60 Harmonic-Major 3 omit 7 omit
191	Pentatonic #4	#62 Mixolydian 3 omit 6 omit
192	Pentatonic #1	(#1 Major 3 omit 7omit)
193	Jazz Pentatonic	#58 Zenkla 4 omit 6 omit
194	India	(#1 Major 4 omit 6omit)
195	Japanese Pentatonic #1	#60 Harmonic-Major 4 omit 7 omit
196	African	#62 Mixolydian 4 omit 5 omit
197	Pentatonic #3	(#1 Major 4 omit 7omit)
198	African	(#1 Major 5 omit 7omit)

*Use Scale Numbers to locate scales
in The Grand Finales, starting page 629
for 5-Tone Scales

End of Chart #24

5-TONE SCALES BY FORMULA & INTERVALS

CHART #25

FORMULA**	INTERVALS	#	NAME
M - (x-15)	1-1- $\frac{1}{2}$ - 2-1 $\frac{1}{2}$	*#198	African
mN - (x-12)	$\frac{1}{2}$ -1-1 - 1 $\frac{1}{2}$ -2	160	Javanese
W - (x-14)	1-1-1 - 2-1	193	Jazz Pentatonic
Aug - (x-10)	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1	174	Pentatonic-Domint.
(4) - (x-8)	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-2	153	Semitonal Pent.
(5) - (x-11)	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - 1 $\frac{1}{2}$ -1 $\frac{1}{2}$	172	Vibhasa
(5) - (x-14)	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - 2-1	170	Jazz Domin. Pent.
(6) - (x-4)	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -2	175	Rewa
(6) - (x-7)	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$	177	Scriabin
(6) - (x-10)	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1	176	Dominant-Pent.
(9) - (x-4)	1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -2	195	Japanese Pent. #1
(9) - (x-7)	1-1-1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$	197	Pentatonic #3
(9) - (x-10)	1-1-1 $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1	196	African
(9) - (x-13)	1-1-1 $\frac{1}{2}$ - 2- $\frac{1}{2}$	194	India
(10) - (x-14)	1-1 $\frac{1}{2}$ - $\frac{1}{2}$ - 2-1	188	Japanese Pent. #2
(11) - (x-4)	1-1 $\frac{1}{2}$ -1 - $\frac{1}{2}$ -2	190	Kumoi #4
(11) - (x-7)	1-1 $\frac{1}{2}$ -1 - 1-1 $\frac{1}{2}$	192	Pentatonic #1
(11) - (x-10)	1-1 $\frac{1}{2}$ -1 - 1 $\frac{1}{2}$ -1	191	Pentatonic #4
(11) - (x-13)	1-1 $\frac{1}{2}$ -1 - 2- $\frac{1}{2}$	189	Semitonal Pent. #5
(14) - (x-14)	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - 2-1	169	Diminished Pent.
(15) - (x-14)	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - 2-1	159	Kumoi #5
(16) - (x-7)	1 $\frac{1}{2}$ -1-1 - 1-1 $\frac{1}{2}$	166	Jazz minor Pent.
(16) - (x-10)	1 $\frac{1}{2}$ -1-1 - 1 $\frac{1}{2}$ -1	164	Pentatonic #2

*Use Numbers to locate in The Grand Finale, page 629

(cont'd)

**For more about Tetrachords & their signs, see pages 23 & 24

Chart #25: 5- Tone Scales by Formula & Intervals (cont'd)

Formula**	Intervals	#	Name
(17) - (x-6)	1½-1-1½ - 1-1	*#158	Pentatonic #5
(19) - (x-6)	1½-1½-1 - 1-1	154	Japanese
(b) - (x-4)	½-1-2 - ½-2	155	Pelog #1
(d) - (x-8)	½-2-½ - 1-2	156	Pelog #4
(d) - (x-14)	½-2-½ - 2-1	157	Hirajoshi #2
(e) - (x-4)	½-2-1 - ½-2	162	Hirajoshi #4
(e) - (x-7)	½-2-1 - 1-1½	165	Japanese Pent. #4
(e) - (x-10)	½-2-1 - 1½-1	163	Kumoi #2
(h) - (x-4)	1-½-2 - ½-2	184	Hirajoshi #1
(h) - (x-7)	1-½-2 - 1-1½	186	Kumoi #1
(h) - (x-10)	1-½-2 - 1½-1	185	African
(k) - (x-7)	1-2-½ - 1-1½	187	Semitonal Pent. #2
(k) - (x-13)	1-2-½ - 2-½	183	Pelog #2
(p) - (x-6)	1½-½-2 - 1-1	171	Japanese Pent. #3
(q) - (x-2)	1½-1-2 - ½-1	161	Semitonal Pent. #1
(u) - (x-7)	2-½-1 - 1-1½	182	Bulgarian
(u) - (x-10)	2-½-1 - 1½-1	181	Semitonal Pent. #3
(u) - (x-13)	2-½-1 - 2-½	180	Pelog #5
(y) - (x-2)	2-½-2 - ½-1	179	Pelog #3
(y) - (x-5)	2-½-2 - 1-½	178	Hirajoshi #3
(z) - (x-13)	2-1-½ - 2-½	173	Hirajoshi #5
(aa) - (x-9)	2-1-1 - 1½-½	168	Japanese Pent. #5
(bb) - (x-5)	2-1-1½ - 1-½	167	Kumoi #3

*Use Scale Numbers to locate scale in

End of Chart #25

The Grand Finale, starting page 629 for 5-Tone Scales

**For more about Tetrachords & their signs, see pages 23 & 24

5-TONE SCALES IN MODAL SERIES

CHART #26

MODAL SERIES #	*#	NAME	INTERVALS
MS 5-I:	1	186 Kumoi #1	$1-\frac{1}{2}-2-1-1\frac{1}{2}$
	2	163 Kumoi #2	$\frac{1}{2}-2-1-1\frac{1}{2}-1$
	3	167 Kumoi #3	$2-1-1\frac{1}{2}-1-\frac{1}{2}$
	4	190 Kumoi #4	$1-1\frac{1}{2}-1-\frac{1}{2}-2$
	5	159 Kumoi #5	$1\frac{1}{2}-1-\frac{1}{2}-2-1$
MS 5-II:	1	161 Semitonal Pentatonic #1	$1\frac{1}{2}-1-2-\frac{1}{2}-1$
	2	187 Semitonal Pentatonic #2	$1-2-\frac{1}{2}-1-1\frac{1}{2}$
	3	181 Semitonal Pentatonic #3	$2-\frac{1}{2}-1-1\frac{1}{2}-1$
	4	153 Semitonal Pentatonic #4	$\frac{1}{2}-1-1\frac{1}{2}-1-2$
	5	189 Semitonal Pentatonic #5	$1-1\frac{1}{2}-1-2-\frac{1}{2}$
MS 5-III:	1	184 Hirajoshi #1	$1-\frac{1}{2}-2-\frac{1}{2}-2$
	2	157 Hirajoshi #2	$\frac{1}{2}-2-\frac{1}{2}-2-1$
	3	178 Hirajoshi #3	$2-\frac{1}{2}-2-1-\frac{1}{2}$
	4	162 Hirajoshi #4	$\frac{1}{2}-2-1-\frac{1}{2}-2$
	5	173 Hirajoshi #5	$2-1-\frac{1}{2}-2-\frac{1}{2}$
MS 5-IV:	1	155 Pelog #1	$\frac{1}{2}-1-2-\frac{1}{2}-2$
	2	183 Pelog #2	$1-2-\frac{1}{2}-2-\frac{1}{2}$
	3	179 Pelog #3	$2-\frac{1}{2}-2-\frac{1}{2}-1$
	4	156 Pelog #4	$\frac{1}{2}-2-\frac{1}{2}-1-2$
	5	180 Pelog #5	$2-\frac{1}{2}-1-2-\frac{1}{2}$
MS 5-V:	1	192 Pentatonic #1	$1-1\frac{1}{2}-1-1-1\frac{1}{2}$
	2	164 Pentatonic #2	$1\frac{1}{2}-1-1-1\frac{1}{2}-1$
	3	197 Pentatonic #3	$1-1-1\frac{1}{2}-1-1\frac{1}{2}$
	4	191 Pentatonic #4	$1-1\frac{1}{2}-1-1\frac{1}{2}-1$
	5	158 Pentatonic #5	$1\frac{1}{2}-1-1\frac{1}{2}-1-1$
MS 5-VI:	1	195 Japanese Pentatonic #1	$1-1-1\frac{1}{2}-\frac{1}{2}-2$
	2	188 Japanese Pentatonic #2	$1-1\frac{1}{2}-\frac{1}{2}-2-1$
	3	171 Japanese Pentatonic #3	$1\frac{1}{2}-\frac{1}{2}-2-1-1$
	4	165 Japanese Pentatonic #4	$\frac{1}{2}-2-1-1-1\frac{1}{2}$
	5	168 Japanese Pentatonic #5	$2-1-1-1\frac{1}{2}-\frac{1}{2}$
MS VII:	1	154 Japanese	$1\frac{1}{2}-1\frac{1}{2}-1-1-1$
	2	166 Jazz minor Pentatonic	$1\frac{1}{2}-1-1-1-1\frac{1}{2}$
	3	**	$1-1-1-1\frac{1}{2}-1\frac{1}{2}$
	4	196 African	$1-1-1\frac{1}{2}-1\frac{1}{2}-1$
	5		$1-1\frac{1}{2}-1\frac{1}{2}-1-1$
MS 5-VIII:	1	182 Bulgarian	$2-\frac{1}{2}-1-1-1\frac{1}{2}$
	2	160 Javanese	$\frac{1}{2}-1-1-1\frac{1}{2}-2$
	3	194 India	$1-1-1\frac{1}{2}-2-\frac{1}{2}$
	4	**	$1-1\frac{1}{2}-2-\frac{1}{2}-1$
	5	**	$1\frac{1}{2}-2-\frac{1}{2}-1-1$

*Use to locate in Grand Finale, starting page 629 for 5-Tone Scales

(cont'd)

**These intervals are backwards of a known scale's, see Chapter 19

Chart #26: 5-Tone Modal Series (cont'd)

Modal Series #	*#	Name	Intervals
MS 5-IX:	1	185 African	$1-\frac{1}{2}-2-1\frac{1}{2}-1$
	2	**	$\frac{1}{2}-2-1\frac{1}{2}-1-1$
	3	**	$2-1\frac{1}{2}-1-1-\frac{1}{2}$
	4	**	$1\frac{1}{2}-1-1-\frac{1}{2}-2$
	5	198 African	$1-1-\frac{1}{2}-2-1\frac{1}{2}$
MS 5-X:	1	177 Scriabin	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	2	**	$1\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5	174 Pentatonic-Dominant	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1$
MS 5-XI:	1	172 Vibhasa	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}$
	2	.....	$1\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	3	.....	$1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	5	.....	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
MS 5-XII:	1	170 Jazz Dominant Pentatonic	$\frac{1}{2}-1\frac{1}{2}-1-2-1$
	2	.....	$1\frac{1}{2}-1-2-1-\frac{1}{2}$
	3	.....	$1-2-1-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$2-1-\frac{1}{2}-1\frac{1}{2}-1$
	5	.....	$1-\frac{1}{2}-1\frac{1}{2}-1-2$
MS 5-XIII:	1	169 Diminished Pentatonic	$1\frac{1}{2}-\frac{1}{2}-1-2-1$
	2	.....	$\frac{1}{2}-1-2-1-1\frac{1}{2}$
	3	.....	$1-2-1-1\frac{1}{2}-\frac{1}{2}$
	4	.....	$2-1-1\frac{1}{2}-\frac{1}{2}-1$
	5	.....	$1-1\frac{1}{2}-\frac{1}{2}-1-2$
MS 5-XIV:	1	175 Rewa	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-2$
	2	.....	$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5	.....	$2-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 5-XV:	1	176 Dominant Pentatonic.....	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1$
	2	.....	$1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5	.....	$1-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
MS 5-XVI:	1	193 Jazz Pentatonic	$1-1-1-2-1$
	2	.....	$1-1-2-1-1$
	3	.....	$1-2-1-1-1$
	4	.....	$2-1-1-1-1$
	5	.....	$1-1-1-1-2$

End of Chart #26

*Use to locate in Grand Finale, starting page 629

**These intervals are backwards of a known scale's, see Chapter 19

NOTE: Remember, for more about Modal Series, see Chapter 20 (page 259)

CHAPTER 12

CHARTS OF 6-TONE SCALES ONLY

(Scales #64 - #103)

CONTENTS OF CHAPTER 12:

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A FEW PRELIMINARIES REGARDING 6-TONE SCALES

Definition of a 6-Tone Scale:

A 6-Tone Scale is a scale made up of two conjunct (overlapping) tetrachords. There are 6 *different* notes (tones) plus the "octave note".

Example of a 6-Tone Scale:

C - D - E - G - A - B \flat - c	=	Notes involved
\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow 1 - 1 - 1 $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1	=	Intervals involved
 (9) - m	=	tetrachords involved (see page 24)

Therefore: The SYMBOL = Major 4omit 7-

The FORMULA = (9) - m

and these identify: Scale #100 Scotch

What is in Chapter 12:

There are five charts in Chapter 12. These five charts contain a total of 40 different 6-Tone Scales, each chart showing different aspects of the scales. Each of this book's 6-Tone Scales appears on each chart, except that the three 6-Tone Combination Scales are not included in Modal Series Chart #31.

NOTE: "om" is used as an abbreviation for "omit" to save space.

NOTE: Each scale can be looked up by its Scale Number (#1 - #198) in The Grand Finale which contains all of the information that I have in this book about each scale. The Grand Finale starts on page 491 for 6-Tone Scales (#64 - #103)

6-TONE SCALES IN NUMERICAL* ORDER BY ALTERED SCALE POINT (by SYMBOL)

CHART #27

#	NAME	SYMBOL
---2---		
*#64	Appalachian (comb. #92 & #--)	Major [2-/2] 3- 6om 7-
65	African	Major 2om 3-
66	Blues	Major 2om 3- 4 4+ 6om 7-
67	Vilasakhani (Hindu)	Major 2- 3- 4+ 5om 6-
68	Locrian 6-Tone	Major 2- 3- 4om 5- 6- 7-
69	Hidshaf (Arabic)	Major 2- 3- 4om 5- 7-
70	Gurjari (Hindu)	Major 2- 3- 5om 6-
71	Abuselik (Arabic)	Major 2- 3om 5- 6- 7-
72	Phrygian 6-Tone	Major 2- 3- 5om 6- 7-
73	In Scale (Japan)	Major 2- 3omit 6- 7-
74	Samanta (Hindu)	Major 2- 3- 6- 7om
75	Irish	Major 2om 3- 6- 7-
76	African	Major 2- 3- 7om
77	Dorian 6-Tone	Major 2om 3- 7-
78	Panchana (Hindu)	Major 2- 4+ 5om
79	Prometheus-Neapolitan	Major 2- 4+ 5om 7-
80	Augmented	Major 2+ 4om 6-
81	Combined-Altered (Hindu)	Major 2- 4+ 6- 7om
82	6-Tone Symmetrical	Major 2- 5+ 7om
83	Bangala (Hindu)	Major 2- 6- 7om
84	Greek	Major 2- 6om 7-
85	Polish	Major 2omit 7-
---3---		
86	Ionian 6-Tone	Major 3omit
87	Appalachian (comb. #94 & #103)	Major [3-/3] 7omit
88	Akebono (Japan)	Major 3- 4om 7-
89	Overtone 6-Tone	Major 3om 4+ 7-
90	Aeolian 6-Tone (Appalachian)	Major 3- 5om 6- 7-
91	Armenian, Ancient Church	Major 3omit 6-
92	Greek	Major 3- 6om 7-
93	Glinka's Scale	Major 3- 6- 7om
94	Hungarian	Major 3- 7om
95	Appalachian	Major 3omit 7-

*Use Scale Numbers to locate scale in
The Grand Finale, starting on page 491
for 6-Tone Scales

(cont'd)

Chart #27: 6-Tone Scales Numerically (with Symbol) (cont'd)

#	Name	Symbol
---4---		
*#96	Scotch	Major 4omit
97	Whole Tone	Major 4+ 5+ 6+ 7omit
98	Prometheus	Major 4+ 5om 7-
99	Lydian 6-Tone	Major 4+ 7om
100	Scotch	Major 4omit 7-
101	Appalachian (comb. #96 & #100)	Major 4omit [7-/7]
---6---		
102	Mixolydian 6-Tone	Major 6 omit 7-
---7---		
103	Guido's Scale	Major 7 omit
*Use Scale Number to locate scale in The Grand Finale, starting on page 491 for 6-Tone Scales		End of Chart #27

**6-TONE SCALES, OMITTED TONE FIRST,
THEN SCALE POINT ALTERATIONS**

CHART #28

SYMBOL												#	NAME
Major	2omit	3-	.	.	.	.	.	.	.	.	.	*#65	African
Major	2omit	3-	6-	7-	.	.	.	.	.	.	.	75	Irish
Major	2omit	3-		7-	.	.	.	.	.	.	.	77	Dorian 6-Tone
Major	2omit			7-	.	.	.	.	.	.	.	85	Polish
Major	2omit	6omit	3-	4	4+	7-	.	.	.	.	.	66	Blues
Major	3omit	.	.	.	.	.	.	.	.	.	.	86	Ionian 6-Tone
Major	3omit	2-	5-	6-	7-	.	.	.	.	.	.	71	Arabic
Major	3omit	2-		6-	7-	.	.	.	.	.	.	73	In Scale
Major	3omit		4+		7-	.	.	.	.	.	.	89	Overtone 6-Tone
Major	3omit			6-	.	.	.	.	.	.	.	91	Armenian Church
Major	3omit			7-	.	.	.	.	.	.	.	95	Appalachian
Major	4omit	.	.	.	.	.	.	.	.	.	.	96	Scotch
Major	4omit	2-	3-	5-	6-	7-	.	.	.	.	.	68	Locrian 6-Tone
Major	4omit	2+			6-	.	.	.	.	.	.	80	Augmented
Major	4omit		3-		7-	.	.	.	.	.	.	88	Akebono
Major	4omit				7-	.	.	.	.	.	.	100	Scotch
Major	4omit	2-	3-	5-	7-	.	.	.	.	.	.	69	Hidshaf
Major	4omit				[7-/7]	.	.	.	.	.	.	101	Appalachian (#96 & #100)
Major	5omit	2-	3-	4+	6-	.	.	.	.	.	.	67	Vilasakhani
Major	5omit	2-	3-		6-	.	.	.	.	.	.	70	Gurjari
Major	5omit	2-	3-		6-	7-	.	.	.	.	.	72	Phrygian 6-Tone
Major	5omit	2-		4+	.	.	.	.	.	.	.	78	Panchana
Major	5omit	2-		4+	7-	.	.	.	.	.	.	79	Prometheus-Neapolitan
Major	5omit		3-		6-	7-	.	.	.	.	.	90	Aeolian 6-Tone
Major	5omit			4+	7-	.	.	.	.	.	.	98	Prometheus
Major	6omit	[2-/2]	3-	7-	.	.	.	.	.	.	.	64	Appalachian (#92 & #--)
Major	6omit	2-		7-	.	.	.	.	.	.	.	84	Greek
Major	6omit		3-	7-	.	.	.	.	.	.	.	92	Greek
Major	6omit			7-	.	.	.	.	.	.	.	102	Mixolydian 6-Tone

*Use Number to locate in The Grand Finale, page 491
for 6-Tone Scales

(cont'd)

Chart #28: 6-Tone Scales, Omitted Tone First (cont'd)

Symbol	#	Name
Major 7omit	*#103	Guido's
Major 7omit 2- 3-	76	African
Major 7omit 2- 3- 6-	74	Samanta
Major 7omit 2- 4+ 6-	81	Combined-Altered
Major 7omit 2- 5+	82	6-Tone Symmetrical
Major 7omit 2- 6-	83	Bangala
Major 7omit 3-	94	Hungarian
Major 7omit [3-/3]	87	Appalachian (#94 & #103)
Major 7omit 3- 6-	93	Glinka's
Major 7omit 4+	99	Lydian 6-Tone
Major 7omit 4+ 5+ 6+	97	Whole Tone

*Use Scale Number to locate scales in
The Grand Finale, starting on page 491
for 6-Tone Scales

End of Chart #28

6-TONE SCALES NUMERICALLY
BY ONE NON-MAJOR SCALE SYMBOL EACH**
 (See Chapter 7, page 81 for more about Alternate Symbols)

CHART #29

#	NAME	ALTERNATE SYMBOL
*#64	Appalachian	Combination Scale
65	African	*#34 Melodic minor 2 omit
66	Blues	#18 Blues 3 omit
67	Vilasakhani	#10 Raga Todi 5 omit
68	Locrian 6-Tone	#12 Locrian 4 omit
69	Hidshaf	#13 Hijazi 4 omit
70	Gurjari	#14 Neapolitan-minor 5 omit
71	Abuselik	#27 Rahawi 3 omit
72	Phrygian 6-Tone	#15 Phrygian 5 omit
73	In Scale	#31 Spanish 3 omit
74	Samanta	#14 Neapolitan-minor 7 omit
75	Irish	#49 Natural minor 2 omit
76	African	#6 Neapolitan-Major 7 omit
77	Dorian 6-Tone	#50 Dorian 2 omit
78	Panchana	#17 Marava 5 omit
79	Prometheus-Neapolitan	#21 India 5 omit
80	Augmented	--
81	Combined-Altered	#20 Chr. Hypolydian 7 omit
82	6-Tone Symmetrical	--
83	Bangala	#30 Double Harmonic 7 omit
84	Greek	#33 Arabic 6 omit
85	Polish	#62 Mixolydian 2 omit
86	Ionian 6-Tone	(#1 Major 3omit)
87	Appalachian	Combination Scale
88	Akebono	#50 Dorian 4 omit
89	Overtone 6-Tone	#55 Overtone 3 omit
90	Aeolian 6-Tone	#49 Natural minor 5 omit
91	Armenian, Ancient Church	#60 Harmonic-Major 3 omit
92	Greek	#50 Dorian 6 omit
93	Glinka's	#47 Harmonic minor 7 omit
94	Hungarian	#34 Melodic minor 7 omit

*Use Number to locate in The Grand Finale, page 491

(cont'd)

**Some scales have several "Non-Major Scale" Symbols;
 I have chosen only one. See Chapter 7, page 81

Chart #29: 6-Tone Scales with One** Alternate Symbol

#	Name	Alternate Symbol	
*#95	Appalachian	*#62	Mixolydian 3 omit
96	Scotch	(#1	Major 4omit)
97	Whole Tone	#53	Leading Whole-Tn 7 omit
98	Prometheus	#55	Overtone 5 omit
99	Lydian 6-Tone	#51	Lydian 7 omit
100	Scotch	#62	Mixolydian 4 omit
101	Appalachian		Combination Scale
102	Mixolydian 6-Tone	#62	Mixolydian 6 omit
103	Guido's	(#1	Major 7omit)

*Use Scale Numbers to locate scales

End of Chart #29

in The Grand Finale, starting on page 491 for 6-Tone Scales

**Some scales have several "Non-Major Scale" Symbols;
I have chosen only one. See Chapter 7, page 81

6-TONE SCALES BY FORMULA & INTERVALS

CHART #30

**FORMULA	INTERVALS	#	NAME
M - (9)	1-1- $\frac{1}{2}$ - 1-1- $1\frac{1}{2}$	*#103	Guido's Scale
M - (11)	1-1- $\frac{1}{2}$ - 1- $1\frac{1}{2}$ -1	102	Mixolydian 6-Tone
[M/m] - (9)	[1-1- $\frac{1}{2}$ /1- $\frac{1}{2}$ -1] - 1-1- $1\frac{1}{2}$	87	Appalachian (#94 & #103)
m - (9)	1- $\frac{1}{2}$ -1 - 1-1- $1\frac{1}{2}$	94	Hungarian
m - (11)	1- $\frac{1}{2}$ -1 - 1- $1\frac{1}{2}$ -1	92	Greek
m - (16)	1- $\frac{1}{2}$ -1 - $1\frac{1}{2}$ -1-1	90	Aeolian 6-Tone
m - (h)	1- $\frac{1}{2}$ -1 - 1- $\frac{1}{2}$ -2	93	Glinka's Scale
[m/mN] - (11)	[1- $\frac{1}{2}$ -1/ $\frac{1}{2}$ -1-1] - 1- $1\frac{1}{2}$ -1	64	Appalachian (#92 & #--)
mN - (9)	$\frac{1}{2}$ -1-1 - 1-1- $1\frac{1}{2}$	76	African
mN - (16)	$\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1-1	72	Phrygian 6-Tone
mN - (18)	$\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$	70	Gurjari
mN - (h)	$\frac{1}{2}$ -1-1 - 1- $\frac{1}{2}$ -2	74	Samanta
mH - Aug	$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$	82	6-Tone Symmetrical
mH - (11)	$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1- $1\frac{1}{2}$ -1	84	Greek
mH - (h)	$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -2	83	Bangala
W - W	1-1-1 - 1-1-1	97	Whole Tone
W - (4)	1-1-1 - $\frac{1}{2}$ -1- $1\frac{1}{2}$	99	Lydian 6-Tone
W - (14)	1-1-1 - $1\frac{1}{2}$ - $\frac{1}{2}$ -1	98	Prometheus
Aug - mH	$1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$	80	Augmented
(4) - W	$\frac{1}{2}$ -1- $1\frac{1}{2}$ - 1-1-1	68	Locrian 6-Tone
(4) - (10)	$\frac{1}{2}$ -1- $1\frac{1}{2}$ - 1- $1\frac{1}{2}$ - $\frac{1}{2}$	67	Vilasakhani
(4) - (14)	$\frac{1}{2}$ -1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1	69	Hidshaf
(5) - (14)	$\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ - $\frac{1}{2}$ -1	79	Prometheus-Neapolitan
(5) - (15)	$\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ -1- $\frac{1}{2}$	78	Panchana
(5) - (a)	$\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -2	81	Combined Altered
(9) - M	1-1- $1\frac{1}{2}$ - 1-1- $\frac{1}{2}$	96	Scotch
(9) - m	1-1- $1\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	100	Scotch
(9) - [M/m]	1-1- $1\frac{1}{2}$ - [1-1- $\frac{1}{2}$ /1- $\frac{1}{2}$ -1] .	101	Appalachian (#96 & #100)

*Use to locate scales in Grand Finale, page 491 for 6-Tone Scales

(cont'd)

**For explanation of Tetrachords & their signs, see pages 23-24

Chart #30: 6-Tone Scales with Formula & Intervals (cont'd)

**Formula	Intervals	#	Name
(11) - M	1-1½-1 - 1-1½	*#86	Ionian 6-Tone
(11) - m	1-1½-1 - 1-½-1	95	Appalachian
(11) - mH	1-1½-1 - ½-1½-½	91	Armenian, Anct.Church
(15) - (5)	1½-1-½ - ½-1½-1	66	Blues
(16) - M	1½-1-1 - 1-1½	65	African
(16) - m	1½-1-1 - 1-½-1	77	Dorian 6-Tone
(16) - mN	1½-1-1 - ½-1-1	75	Irish
(d) - W	½-2-½ - 1-1-1	71	Abuselik
(e) - mN	½-2-1 - ½-1-1	73	In Scale
(h) - m	1-½-2 - 1-½-1	88	Akebono
(k) - m	1-2-½ - 1-½-1	89	Overtone 6-Tone
(u) - m	2-½-1 - 1-½-1	85	Polish

*Use to look up scales in Grand Finale, page 491 for 6-Tone Scales End of Chart #30

**For explanation of Tetrachords & their signs, see pages 23-24

6-TONE SCALES IN MODAL SERIES***

CHART #31

MODAL SERIES #	#	NAME	INTERVALS
MS 6-I:	1	*90 Aeolian 6-Tone	1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1
	2	68 Locrian 6-Tone	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1-1
	3	86 Ionian 6-Tone	1-1 $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	4	77 Dorian 6-Tone	1 $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1
	5	99 Lydian 6-Tone	1-1-1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$
	6	102 Mixolydian 6-Tone	1-1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1
MS 6-II:	1	**	1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	2	**	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1
	3	94 Hungarian	1- $\frac{1}{2}$ -1-1-1-1 $\frac{1}{2}$
	4	.....	$\frac{1}{2}$ -1-1-1-1 $\frac{1}{2}$ -1
	5	**	1-1-1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$
	6	100 Scotch	1-1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
MS 6-III:	1	103 Guido's	1-1- $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$
	2	92 Greek	1- $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -1
	3	72 Phrygian 6-Tone	$\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -1-1
	4	96 Scotch	1-1-1 $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	5	95 Appalachian	1-1 $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	6	75 Irish	1 $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1
MS 6-IV:	1	93 Glinka's	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -2
	2	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -2-1
	3	.....	1-1- $\frac{1}{2}$ -2-1- $\frac{1}{2}$
	4	88 Akebono	1- $\frac{1}{2}$ -2-1- $\frac{1}{2}$ -1
	5	73 In Scale	$\frac{1}{2}$ -2-1- $\frac{1}{2}$ -1-1
	6	.....	2-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
MS-V:	1	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-2
	2	**	1-1- $\frac{1}{2}$ -1-2- $\frac{1}{2}$
	3	**	1- $\frac{1}{2}$ -1-2- $\frac{1}{2}$ -1
	4	.....	$\frac{1}{2}$ -1-2- $\frac{1}{2}$ -1-1
	5	.....	1-2- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	6	85 Polish	2- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
MS6-VI:	1	.....	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1 $\frac{1}{2}$
	2	84 Greek	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1
	3	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	.....	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	5	91 Armenian, Anct. Church	1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1

*Use Scale Numbers to locate in Grand Finale, page 4491 for 6-Tone Scales (cont'd)

**These intervals are backwards of a known scale's, see Chapter 19

***For more about Modal Series, see Chapter 20, page 259

Chart #31: 6-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 6-VII:	1	*82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	2	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	3	82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5	82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 6-VIII:	1	79 Prometheus-Neapolitan	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1$
	2		$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	3		$1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4		$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1$
	5		$\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	6	**	$1-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
MS 6-IX:	1	71 Abuselik	$\frac{1}{2}-2-\frac{1}{2}-1-1-1$
	2		$2-\frac{1}{2}-1-1-1-\frac{1}{2}$
	3	74 Samanta	$\frac{1}{2}-1-1-1-\frac{1}{2}-2$
	4	**	$1-1-1-\frac{1}{2}-2-\frac{1}{2}$
	5	**	$1-1-\frac{1}{2}-2-\frac{1}{2}-1$
	6		$1-\frac{1}{2}-2-\frac{1}{2}-1-1$
MS 6-X:	1	98 Prometheus	$1-1-1-1\frac{1}{2}-\frac{1}{2}-1$
	2		$1-1-1\frac{1}{2}-\frac{1}{2}-1-1$
	3		$1-1\frac{1}{2}-\frac{1}{2}-1-1-1$
	4		$1\frac{1}{2}-\frac{1}{2}-1-1-1-1$
	5	76 African	$\frac{1}{2}-1-1-1-1-1\frac{1}{2}$
	6		$1-1-1-1-1\frac{1}{2}-\frac{1}{2}$
MS 6-XI:	1	65 African	$1\frac{1}{2}-1-1-1-1-\frac{1}{2}$
	2		$1-1-1-1-\frac{1}{2}-1\frac{1}{2}$
	3		$1-1-1-\frac{1}{2}-1\frac{1}{2}-1$
	4		$1-1-\frac{1}{2}-1\frac{1}{2}-1-1$
	5	**	$1-\frac{1}{2}-1\frac{1}{2}-1-1-1$
	6		$\frac{1}{2}-1\frac{1}{2}-1-1-1-1$
MS 6-XII:	1	67 Vilasakhani	$\frac{1}{2}-1-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	2		$1-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3		$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	4	**	$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}$
	5		$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1$
	6		$\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1-1\frac{1}{2}$

*Use Scale Numbers to locate scales in The Grand Finale, page 491

**These intervals are backwards of a known scale's, see Chapter 19

(cont'd)

Chart #31: 6-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 6-XIII:	1	*66 Blues	$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	2		$1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	3		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1$
	4	78 Panchana	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}$
	5		$1\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	6		$1-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
MS 6-XIV:	1	97 Whole Tone	$1-1-1-1-1-1$
	2	97 Whole Tone	$1-1-1-1-1-1$
	3	97 Whole Tone	$1-1-1-1-1-1$
	4	97 Whole Tone	$1-1-1-1-1-1$
	5	97 Whole Tone	$1-1-1-1-1-1$
	6	97 Whole Tone	$1-1-1-1-1-1$
MS 6-XV:	1	69 Hidshaf	$\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
	2		$1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	3		$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1$
	4		$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-1\frac{1}{2}$
	5		$\frac{1}{2}-1-\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}$
	6		$1-\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 6-XVI:	1	81 Combined-Altered	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2$
	2		$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}$
	3		$1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}$
	4		$\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-1$
	5		$\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	6		$2-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
MS 6-XVII:	1	70 Gurjari	$\frac{1}{2}-1-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	2		$1-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3		$1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	4		$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1$
	5		$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-1\frac{1}{2}$
	6		$\frac{1}{2}-\frac{1}{2}-1-1-1\frac{1}{2}-1\frac{1}{2}$
MS 6-XVIII:	1	83 Bangala	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-2$
	2		$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-2-\frac{1}{2}$
	3		$\frac{1}{2}-1-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}$
	4		$1-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5		$\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
	6		$2-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
MS 6-XIX:	1	89 Overtone 6-Tone	$1-2-\frac{1}{2}-1-\frac{1}{2}-1$
	2		$2-\frac{1}{2}-1-\frac{1}{2}-1-1$
	3		$\frac{1}{2}-1-\frac{1}{2}-1-1-2$
	4		$1-\frac{1}{2}-1-1-2-\frac{1}{2}$
	5		$\frac{1}{2}-1-1-2-\frac{1}{2}-1$
	6		$1-1-2-\frac{1}{2}-1-\frac{1}{2}$

*Use Scale Numbers in The Grand Finale, starting page 491

End of Chart #31

NOTE: Remember, for more about Modal Series, see Chapter 20, page 259

CHAPTER 13

CHARTS OF 7-TONE SCALES ONLY

(SCALES #1 - #63)

CONTENTS OF CHAPTER 13:

A Few Preliminaries Regarding 7-Tone Scales	Page 161
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A FEW PRELIMINARIES REGARDING 7-TONE SCALES

Definition:

A 7-Tone Scale is a scale made up two disjunct tetrachords which are connected by one Connecting Interval (abbreviated "Con. Int.").

Another definition could be that a 7-Tone Scale is a scale made up of 7 *different* notes (tones) contained within an octave, plus an 8th note (like the first note) at the end of the octave.

Example of a 7-Tone Scale:

C - D \flat - E - F - G - A - B \flat - c	=	Notes involved
\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1 - $\frac{1}{2}$ - 1	=	Intervals involved
$\underbrace{\hspace{1.5cm}}_{\text{mH}} \quad - 1 - \quad \underbrace{\hspace{1.5cm}}_{\text{m}}$	=	Tetrachords involved (see page 24)

Therefore: The SYMBOL = Major 2- 7-
 The FORMULA = mH -1- m

and these identify: Scale #33 Arabic

What Is In Chapter 13:

There are three charts in Chapter 13. These three charts contain a total of 63 different 7-Tone Scales. Each scale appears on the first two charts. The six Combination Scales, though, are not in the third chart, Chart #34, "Modal Series". However, these six Combination Scales appear twice on the second chart, Chart #33, if the "combination" is in the first tetrachord. They would appear once under each of the two "combining tetrachords". See page 124 for more about Combination Scales.

NOTE: Each scale can be looked up by its Scale Number (#1 - #63) in The Grand Finale, which contains all of the information in this book about each scale in this book. The Grand Finale starts on page 405 with 7-Tone Scales.

NOTE: For more about Tetrachords, their signs, & Formulas, see pages 23-24.
 For more about Symbols, see page 34.
 For more about Scale Numbers, see page 8.

7-TONE SCALES NUMERICALLY, BY ALTERED SCALE POINTS
(by SYMBOL)
CHART #32

#	NAME	SYMBOL
*#1	Major	Major
---2---		
2	Ananda (Hindu)	Major 2-
3	Chromatic Mixolydian, Asc. (Anct Grk)	Major 2- 2 3+ 4+ 6+ 7omit
4	Chromatic Dorian, Asc. (Anct Grk)	Major 2- 2 3omit 6- 6 7om
5	Jewish (combines #32 & #62)	Major [2/2+] 7-
6	Neapolitan-Major	Major 2- 3-
7	Polish (combines #15 & #31)	Major 2- [3-/3] 6- 7-
8	Super-Locrian	Major 2- 3- 4- 5- 6- 7-
9	Chrm. Hypophrygian, Asc. (Anct Grk)	Major 2+ 3+ 4+ 6+
10	Raga Todi (Hindu)	Major 2- 3- 4+ 6-
11	Byzantine	Major 2- 3- 4- 6- 7-
12	Locrian	Major 2- 3- 5- 6- 7-
13	Hijazi (Arabic)	Major 2- 3- 5- 7-
14	Neapolitan-minor	Major 2- 3- 6-
15	Phrygian	Major 2- 3- 6- 7-
16	Javanese	Major 2- 3- 7-
17	Marava (Hindu)	Major 2- 4+
18	Blues	Major 2+ 4 4+ 6om 7-
19	Enigmatic (Verdi)	Major 2- 4+ 5+ 6+
20	Chrm. Hypolydian, Asc. (Anct Grk)	Major 2- 4+ 6-
21	India	Major 2- 4+ 7-
22	Hungarian-Major	Major 2+ 4+ 7-
23	Chrm Lydian, Asc. (Ancient Greek)	Major 2- 5-
24	Enigmatic, Descending-Inverted	Major 2- 5+ 6+
25	Chrm. Phrygian, Asc. (Anct. Grk.)	Major 2+ 5+ 6+
26	Persian	Major 2- 5- 6-
27	Rahawi (Arabic)	Major 2- 5- 6- 7-
28	Oriental	Major 2- 5- 7-
29	Persian	Major 2+ 5+ 7-
30	Double Harmonic	Major 2- 6-
31	Spanish	Major 2- 6- 7-
32	Roumanian-Major	Major 2+ 7-
33	Arabic	Major 2- 7-

*Use Number to look up in The Grand Finale, page 405 for 7-Tone Scales

(cont'd)

Chart #32: 7-Tone Scales Numerically (with Symbol) (cont'd)

#	Name	Symbol
---3---		
*#34	Melodic minor	Major 3-
35	Arezzo Italy) (comb. #1 & #34)	Major [3-/3]
36	Basque (combines #50 & 62)	Major [3-/3] 7-
37	Lydian-Diminished	Major 3- 4+
38	Conway's 7-Tone	Major 3- 4 4+ 6omit
39	Turkish (combines #44 & #50)	Major 3- [4/4+] 7-
40	Hungarian-minor	Major 3- 4+ 6-
41	Chrm. Hypodorian, Asc. (Anct Grk)	Major 3- 4- 6- 6 7omit
42	Greek	Major 3- 4+ 6- 7-
43	Greek	Major 3- 4- 6- 7-
44	Roumanian-minor	Major 3- 4+ 7-
45	Half-Diminished	Major 3- 5- 6- 7-
46	Zangula (Arabic)	Major 3- 5- 7-
47	Harmonic-minor	Major 3- 6-
48	Ptolemy's Mixed Hypodorian	Major 3- 6- 6 7omit
49	Natural minor	Major 3- 6- 7-
50	Dorian	Major 3- 7-
---4---		
51	Lydian	Major 4+
52	Lydian-Augmented	Major 4+ 5+
53	Leading Whole-Tone	Major 4+ 5+ 6+
54	Lydian-minor	Major 4+ 6- 7-
55	Overtone	Major 4+ 7-
---5---		
56	Ionian-Augmented	Major 5+
57	Locrian-Major	Major 5- 6- 7-
58	Zenkla (Arabic)	Major 5- 7-
59	Rummel-Meia (Arabic)	Major 5+ 7-
---6---		
60	Harmonic-Major	Major 6-
61	Hindustan	Major 6- 7-
---7---		
62	Mixolydian	Major 7-
63	Negro-Spiritual (comb #1 & #62)	Major [7-/7]

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405 for 7-Tone Scales

End of Chart #32

7-TONE SCALES BY 1ST TETRACHORD WITH INTERVALS
(by FORMULA)***

CHART #33

1st TET	CON INT	2nd TET	INTERVALS				#	NAME
M	-1-	M	.....	1-1-½	-1-	1-1-½	.....	*# 1 Major
M	-1-	m	.....	1-1-½	-1-	1-½-1	.....	62 Mixolydian
M	-1-	[M/m]	.....	1-1-½	-1-	[1-1-½/1-½-1]	..	63 Negro Spiritual
M	-1-	mN	.....	1-1-½	-1-	½-1-1	.....	61 Hindustan
M	-1-	mH	.....	1-1-½	-1-	½-1½-½	.....	60 Harmonic-Major
M	-½-	W	.....	1-1-½	-½-	1-1-1	.....	57 Locrian-Major
M	-1½-	Dim	.....	1-1-½	-1½-	½-1-½	.....	56 Ionian-Augmented
M	-1½-	(2)	.....	1-1-½	-1½-	½-½-1	.....	59 Rummel-Meia
M	-½-	(14)	.....	1-1-½	-½-	1½-½-1	.....	58 Zenkla
[M/m]	-1-	M	....	[1-1-½/1-½-1]	-1-	1-1-½	.....	**35 Arezzo (#1 & 34)
[M/m]	1-1	m	.....	[1-1-½/1-½-1]	-1-	1-½-1	.....	**36 Basque (#50, 62)
m	-1-	M	.....	1-½-1	-1-	1-1-½	.....	34 Melodic minor
m	-1-	m	.....	1-½-1	-1-	1-½-1	.....	50 Dorian
m	-1-	mN	.....	1-½-1	-1-	½-1-1	.....	49 Natural minor
m	-1-	mH	.....	1-½-1	-1-	½-1½-½	.....	47 Harmonic minor
m	-½-	W	.....	1-½-1	-½-	1-1-1	.....	45 Half-Diminished
m	-½-	(3)	.....	1-½-1	-1-	½-½-1½	.....	48 Ptolemy's
m	-½-	(14)	.....	1-½-1	-½-	1½-½-1	.....	46 Zangula
m	-½-	(d)	.....	1-½-1	-½-	½-2-½	.....	38 Conway's 7-Tone
[m-1/(8)-½]-		m	...	[1-½-1 -1/1-½-1½ -½]		1-½-1	.....	**39 Turkish (#50, 44)
mN	-1-	M	.....	½-1-1	-1-	1-1-½	.....	6 Neapolitan-Major
mN	-1-	m	.....	½-1-1	-1-	1-½-1	.....	16 Javanese
mN	-1-	mN	.....	½-1-1	-1-	½-1-1	.....	15 Phrygian
mN	-1-	mH	.....	½-1-1	-1-	½-1½-½	.....	14 Neapolitan-minor
mN	-½-	W	.....	½-1-1	-½-	1-1-1	.....	12 Locrian
mN	-½-	(14)	.....	½-1-1	-½-	1½-½-1	.....	13 Hijazi
[mN/mH]	-1-	mN	.	[½-1-1/1½-½-1]	-1-	½-1-1	.....	**7 Polish (#15, 31)

*Use to look up in Grand Finale, starting page 405 for 7-Tone Scales (cont'd)

**Combination Scale, see page 124 (#39,#7 in chart twice, once under each 1st tetrachord)

***For more about Tetrachords & their signs, see page 23-24

Chart #33: 7-Tone Scales by 1st Tetrachord (FORMULA) & Intervals (cont'd)

1st Tet	Con Int	2nd Tet	Intervals		#	Name
mH	-1-	M	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	-1- 1-1- $\frac{1}{2}$	* 2 Ananda
mH	-1-	m	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	-1- 1- $\frac{1}{2}$ -1	33 Arabic
mH	-1-	mN	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	-1- $\frac{1}{2}$ -1-1	31 Spanish
[mN/mH]	-1-	mN	.....	$\frac{1}{2}$ -1-1/1 $\frac{1}{2}$ - $\frac{1}{2}$ -1]	-1- $\frac{1}{2}$ -1-1	**7 Polish (#15, 31)
mH	-1-	mH	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	30 Double Harmonic
mH	- $\frac{1}{2}$ -	W	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ - 1-1-1	27 Rahawi
mH	-1 $\frac{1}{2}$ -	(7)	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	-1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$	24 Enigmatic,Des-Inv
mH	- $\frac{1}{2}$ -	(10)	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$	26 Persian
mH	- $\frac{1}{2}$ -	(14)	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	28 Oriental
mH	- $\frac{1}{2}$ -	(15)	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ - 1 $\frac{1}{2}$ -1- $\frac{1}{2}$	23 Chrom. Lydian, Asc.
W	- $\frac{1}{2}$ -	M	.....	1-1-1	- $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	51 Lydian
W	- $\frac{1}{2}$ -	m	.....	1-1-1	- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	55 Overtone
W	- $\frac{1}{2}$ -	mN	.....	1-1-1	- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	54 Lydian-minor
W	-1-	Dim	.....	1-1-1	-1- $\frac{1}{2}$ -1- $\frac{1}{2}$	52 Lydian-Augment.
W	-1-	(7)	.....	1-1-1	-1- 1- $\frac{1}{2}$ - $\frac{1}{2}$	53 Leading Whole-Tn
Dim	-1 $\frac{1}{2}$ -	mN	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$	-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	11 Byzantine
Dim	-1-	W	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$	-1- 1-1-1	8 Super-Locrian
(3)	-1-	(3)	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	4 Chrom. Dorian, Asc.
(3)	- $\frac{1}{2}$ -	(5)	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$	- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1	3 Chr.Mixolyd.,Asc.
(4)	- $\frac{1}{2}$ -	mH	.....	$\frac{1}{2}$ -1-1 $\frac{1}{2}$	- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	10 Raga Todi
(5)	- $\frac{1}{2}$ -	M	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	- $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	17 Marava
(5)	- $\frac{1}{2}$ -	m	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	21 India
(5)	- $\frac{1}{2}$ -	mH	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$	20 Chr.Hypolyd.,Asc
(5)	-1-	(7)	.....	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	-1- 1- $\frac{1}{2}$ - $\frac{1}{2}$	19 Enigmatic, Asc.

*Use to look up in Grand Finale, starting page 405 for 7-Tone Scales (cont'd)

**Combination Scale, see page 124 (in this chart twice, once under each 1st tetrachord)

Chart #33: 7-Tone Scales by 1st Tetrachord (FORMULA) & Intervals (cont'd)

1st Tet	Con Int	2nd Tet	Intervals			#	Name
(7)	-1½-	mN	.....	1-½-1½	-1½-	½-1-1	*43 Greek
(7)	-1½-	(3)	.....	1-½-1½	-1½-	½-½-1½	41 Chr.Hypodor.,Asc.
(8)	-½-	M	.....	1-½-1½	-½-	1-1-½	37 Lydian-Dimin.
(8)	-½-	m	.....	1-½-1½	-½-	1-½-1	44 Roumanian-min.
[m-1/(8)-½-]		m	... [1-½-1	-1/1-½-1½	-½]	1-½-1	**39 Turkish (#50, 44)
(8)	-½-	mN	.....	1-½-1½	-½-	½-1-1	42 Greek
(8)	-½-	mH	.....	1-½-1½	-½-	½-1½-½	40 Hungarian-min.
(13)	-1-	m	.....	1½-½-½	-1-	1-½-1	32 Roumanian-Maj.
(13)	-1½-	(2)	.....	1½-½-½	-1½-	½-½-1	29 Persian
(13)	-½-	(5)	.....	1½-½-½	-½-	½-1½-1	18 Blues
(13)	-1½-	(7)	.....	1½-½-½	-1½-	1-½-½	25 Chrm.Phrygian,Asc.
(14)	-½-	m	.....	1½-½-1	-½-	1-½-1	22 Hungarian-Maj.
(15)	-½-	(13)	.....	1½-1-½	-½-	1½-½-½	9 Chrm.Hypophrg,Asc.

*Use Numbers to look up individual scales in

End of Chart #33

The Grand Finale, page 405 for 7-Tone Scales

**Combination Scale, see page 124 (in this chart twice, once under each 1st tetrachord)

NOTE: Remember, for more about Formulas and Tetrachords and Tetrachord Signs,
refer to pages 23-24

7-TONE SCALES IN MODAL SERIES***

CHART #34

MODAL SERIES #	#	NAME	INTERVALS
MS 7-I:	1	49* Natural minor (Aeolian) ..	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1
	2	12 Locrian	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1-1
	3	1 Major (Ionian)	1-1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	4	50 Dorian	1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1
	5	15 Phrygian	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1-1
	6	51 Lydian.....	1-1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	7	62 Mixolydian	1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
MS 7-II:	1	16 Javanese	$\frac{1}{2}$ -1-1-1-1- $\frac{1}{2}$ -1
	2	52 Lydian-Augmented	1-1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	55 Overtone	1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	4	61 Hindustan	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	5	45 Half-Diminished	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1
	6	8 Super-Locrian	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1-1
	7	34 Melodic minor	1- $\frac{1}{2}$ -1-1-1-1- $\frac{1}{2}$
MS 7-III:	1	57 Locrian-Major	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	2	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1-1
	3	**	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1-1-1
	4	6 Neapolitan-Major	$\frac{1}{2}$ -1-1-1-1-1- $\frac{1}{2}$
	5	53 Leading Whole Tone	1-1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	7	54 Lydian-minor	1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
MS 7-IV:	1	28 Oriental	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
	2	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	30 Double Harmonic	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	7	40 Hungarian-minor	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
MS 7-V:	1	25 Chromatic Phrygian, Asc. .	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	2	4 Chromatic Dorian, Asc.	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	3	20 Chromatic Hypolydian, Asc.	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	4	9 Chromatic Hypophrygian, Asc.	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	5	41 Chromatic Hypodorian, Asc.	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	6	3 Chromatic Mixolydian, Asc.	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
	7	23 Chromatic Lydian, Asc.	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$

*Use Sc1 #'s to locate scales in Grand Finale, page 405

(cont'd)

**These intervals are backward of a known scale, see Chapter 19

***For more about Modal Series, see page Chapter 20, page 259

Chart #34: 7-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 7-VI:	1	10 Raga Todi	$\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	2	*	$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3	29 Persian	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	4	*	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}$
	5	26 Persian	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	6	*	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	7	.....	$\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
MS 7-VII:	1	13 Hijazi	$\frac{1}{2}-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
	2	56 Ionian-Augmented	$1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	3	44 Roumanian-minor	$1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1$
	4	31 Spanish	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-1$
	5	**f	$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}$
	6	.....	$\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}-1\frac{1}{2}$
	7	47 Harmonic minor	$1-\frac{1}{2}-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 7-VIII:	1	33 Arabic	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1$
	2	.....	$1\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1-\frac{1}{2}$
	3	.....	$\frac{1}{2}-1-1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4	60 Harmonic Major	$1-1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5	46 Zangula	$1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
	6	11 Byzantine	$\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1$
	7	37 Lydian Diminished.....	$1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}$
MS 7-IX:	1	42 Greek	$1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1$
	2	27 Rahawi	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-1$
	3	.....	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-1-\frac{1}{2}$
	4	.....	$\frac{1}{2}-\frac{1}{2}-1-1-1-\frac{1}{2}-1\frac{1}{2}$
	5	14 Neapolitan-minor	$\frac{1}{2}-1-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	6	.....	$1-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	7	59 Rummel-Meia.....	$1-1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
MS 7-X:	1	43 Greek	$1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1$
	2	.....	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1-1$
	3	2 Ananda	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1-1-\frac{1}{2}$
	4	.....	$1\frac{1}{2}-\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}$
	5	.....	$\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6	*	$1-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	7	58 Zenkla	$1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$

*These intervals are backwards of a known scale's, see Chapter 19 (cont'd)

**This is one of my "missing" scales, see page 317

Chart #34: 7-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 7-XI:	1	21 India	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1$
	2		$1\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}$
	3	*	$1-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4		$\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1$
	5		$1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	6	**c	$\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1$
	7		$1-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}$
MS 7-XII:	1	22 Hungarian-Major	$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1$
	2		$\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-1-1\frac{1}{2}$
	3	**k	$1-\frac{1}{2}-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	4		$\frac{1}{2}-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1$
	5		$1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	6	**d	$\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1$
	7		$1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}$
MS 7-XIII:	1	32 Roumanian-Major	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1$
	2		$\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1-1\frac{1}{2}$
	3	*	$\frac{1}{2}-1-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	4		$1-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	5		$1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	6	**b	$\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1$
	7		$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}$
MS 7-XIV:	1	48 Ptolemy's	$1-\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	2		$\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	3		$1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	4		$1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1$
	5		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-1$
	6	17 Marava	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}$
	7		$1\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}$
MS 7-XV:	1	18 Blues	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	2		$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	3		$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	4		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	5		$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	6		$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	7		$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$

*These intervals are backwards of a known scale's, see Chapter 19 (cont'd)

**This is one of my "missing" scales, see page 317

Chart #34: 7-Tone Modal Series

Modal Series #	#	Name	Intervals
MS 7-XVI:	1	19 Enigmatic (Verdi)	$\frac{1}{2}-1\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}$
	2		$1\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3		$1-1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4		$1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	5		$1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1$
	6		$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1-1$
	7		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1-1-\frac{1}{2}$
MS 7-XVII:	1	24 Enigmatic, Des-Inv	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	2		$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3		$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4		$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5		$1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6		$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	7		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
MS 7-XVIII:	1	38 Conway's 7-Tone	$1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}$
	2		$\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1$
	3		$1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}$
	4		$\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}-1$
	5		$\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}$
	6		$2-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	7		$\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2$

End of Chart #34

NOTE: Remember, the Scale Numbers (#1 - #198) can be used to look up individual scales in The Grand Finale for more information. The Grand Finale starts on page 405 for 7-Tone Scales (#1 - #63).

CHAPTER 14

CHARTS OF 8-TONE SCALES ONLY

(Scales #104 - #136)

CONTENTS OF CHAPTER 14:

A Few Preliminaries Regarding 8-Tone Scales	Page 173
Chart #35: 8-Tone Scales Numerically by Altered Scale Points (by SYMBOL)	174
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A FEW PRELIMINARIES REGARDING 8-TONE SCALES

Definition:

An 8-Tone Scale is a scale made up of two Tetrachords connected by two Connecting Intervals, all of which is contained within an octave. These two Connecting Intervals (abbreviated "Con. Int.") are really a conjunct trichord, but the scales seem simpler to see and remember if they are used as Connecting Intervals.

Another definition is that an 8-Tone Scale consists of 7 *different* notes (tones) plus one alteration of one of those 7 notes plus the octave note.

Occasionally an 8-Tone Scale is simply a regular 7-Tone Scale with an added note (a 7th) below the octave which is an alteration of the 7th Scale Point Tone within the octave or else an added different 9th (a 2nd above the octave). Scales #119 and #135 are the only scales in this book that are formed that way.

Example of an 8-Tone Scale:

C - D - E \flat - F - G - A \flat - A - B - c	= Notes involved
\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow 1 - $\frac{1}{2}$ - 1 - 1 - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$	= Intervals involved
 m - 1 - $\frac{1}{2}$ - Dim	= Tetrachords involved (see page 23-24)

Therefore: The SYMBOL = Major 3- 6- 6

The FORMULA = m -1- $\frac{1}{2}$ - Dim

and these identify: Scale #127 Arabic

What is in This Chapter:

There are three charts in this chapters. These charts contain a total of 33 different 8-Tone Scales. Each scale appears on the first two charts, but the third chart, Chart #37, "Modal Series", does not contain the one Combination Scale nor the two scales that are more than an octave.

NOTE: Remember, each scale can be looked up by its Scale Number (#104 to #136) in The Grand Finale, which contains all of the information there is in this book about each scale in this book. The Grand Finale starts on page 545 for the 8-Tone Scales.

8-TONE SCALES NUMERICALLY* BY ALTERED SCALE POINTS (by SYMBOLS)

CHART #35

#	NAME	SYMBOL
---2---		
*#104	Hindu	Major 2- 2
105	Locrian 8-Tone #1	Major 2- 2 3- 5- 6- 7-
106	Phrygian 8-Tone #1	Major 2- 2 3- 6- 7-
107	Hindu	Major 2- 2 4+
108	Portuguese	Major 2 2+ 4+ 8+
109	Diminished #2	Major 2- 3- 3 4+ 7-
110	Espla's Scale	Major 2- 3- 3 5- 6- 7-
111	Spanish 8-Tone	Major 2- 3- 3 6- 7-
112	Latin-American	Major 2- 3- 3 7-
113	Composite #1	Major 2- 3- 4- 5- 5 6- 7-
114	Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-
115	Zirafkand (Arabic)	Major 2- 3- 5- 6- 6
116	'Iraq (Arabic)	Major 2- 3- 5- 6- 7- 7
117	Phrygian 8-Tone #2	Major 2- 3- 6- 6 7-
118	Buzurg (Arabic)	Major 2- 4 4+
**119	Scotch Bagpipe tuning	Major 2- 4+ 9
120	Irak	Major 2- 5- 6- 6
---3---		
121	Jobim's	Major 3- 3 4+ 7-
122	Aeolian 8-Tone #1	Major 3- 3 6- 7-
123	Dorian 8-Tone #1	Major 3- 3 7-
+124	Conway's 8-Tone	Major 3- 4 4+ [6-/6]
125	Diminished #1	Major 3- 5- 6- 6
126	Composite #2	Major 3- 5- 6- 6 7-
127	Arabic	Major 3- 6- 6
128	Aeolian 8-Tone #2	Major 3- 6- 6 7-
129	Isfahan (Arabic)	Major 3- 6- 7- 7
130	Dorian 8-Tone #2	Major 3- 7- 7

*Use to locate scale in Grand Finale,
starting on page 545 for 8-Tone Scales

(cont'd)

**more than an octave

+a Combination Scale

Chart #35: 8-Tone Scales Numerically (with Symbol) (cont'd)

#	Name	Symbol
---4---		
*#131	Ryo 8-Tone (Japan)	Major 4 4+
132	Hindu	Major 4+ 6- 6
---5---		
133	Hindu	Major 5- 5 7-
---6---		
134	Bop Scale	Major 6- 6
---7---		
**135	Magon Abot (Jewish)	Major low 7, 3- 6- 7-
136	Mixolydian 8-Tone	Major 7- 7

*Use to locate scale in Grand Finale,
starting page 545 for 8-Tone Scales
**more than an octave

End of Chart #35

8-TONE SCALES BY 1ST TETRACHORD WITH INTERVALS (by FORMULA)*

CHART #36

1st TET	CON INT	2nd TET	INTERVALS			#	NAME
M	-1/2-1/2-	M	.....	1-1-1/2	-1/2-1/2-	1-1-1/2	#131 Ryo 8-Tone
M	-1/2-1/2-	m	.....	1-1-1/2	-1/2-1/2-	1-1/2-1	133 Hindu
M	-1-1/2-	Dim	....	1-1-1/2	-1-1/2-	1/2-1-1/2	134 Bop Scale
M	-1-1-	(1)	.....	1-1-1/2	-1-1-	1/2-1/2-1/2	136 Mixolydian 8-Tone
m	-1/2-1/2-	[m/mH]	..	1-1/2-1	-1/2-1/2-	[1-1-1/2/1/2-1 1/2-1/2]	124 Conway's 8-Tone
1/2, m	-1-	mN	.....	1/2, 1-1/2-1	-1-	1/2-1-1	**135 Magon Abot (see #49)
m	-1/2-1-	Dim	....	1-1/2-1	-1/2-1-	1/2-1-1/2	125 Diminished #1
m	-1-1/2-	Dim	....	1-1/2-1	-1-1/2-	1/2-1-1/2	127 Arabic
m	-1-1-	(1)	.....	1-1/2-1	-1-1-	1/2-1/2-1/2	130 Dorian 8-Tone #2
m	-1/2-1-	(2)	.....	1-1/2-1	-1/2-1-	1/2-1/2-1	126 Composite #2
m	-1-1/2-	(2)	.....	1-1/2-1	-1-1/2-	1/2-1/2-1	128 Aeolian 8-Tone #2
m	-1-1/2-	(7)	.....	1-1/2-1	-1-1/2-	1-1/2-1/2	129 Isfahan
mN	-1/2-1/2-	mN	.....	1/2-1-1	-1/2-1/2-	1/2-1-1	114 Locrian 8-Tone #2
mN	-1/2-1-	Dim	....	1/2-1-1	-1/2-1-	1/2-1-1/2	115 Zirafkand
mN	-1-1/2-	(2)	.....	1/2-1-1	-1-1/2-	1/2-1/2-1	117 Phrygian 8-Tone #2
mN	-1/2-1-	(7)	.....	1/2-1-1	-1/2-1-	1-1/2-1/2	116 'Iraq
mH	-1/2-1/2-	M	.....	1/2-1 1/2-1/2	-1/2-1/2-	1-1-1/2	118 Buzurg
mH	-1/2-1-	Dim	....	1/2-1 1/2-1/2	-1/2-1	1/2-1-1/2	120 Irak
W	-1/2-1/2-	Dim	....	1-1-1	-1/2-1/2-	1/2-1-1/2	132 Hindu
Dim	-1/2-1	m	.....	1/2-1-1/2	-1/2-1-	1-1/2-1	112 Latin American
Dim	-1-1/2-	m	.....	1/2-1-1/2	-1-1/2-	1-1/2-1	109 Diminished #2
Dim	-1/2-1-	mN	.....	1/2-1-1/2	-1/2-1-	1/2-1-1	111 Spanish 8-Tone
Dim	-1-1/2-	mN	.....	1/2-1-1/2	-1-1/2-	1/2-1-1	113 Composite #1
Dim	-1/2-1/2-	W	.....	1/2-1-1/2	-1/2-1/2-	1-1-1	110 Espla's Scale

*For explanations of Tetrachords & their signs, see page 23-24

(cont'd)

**More than an octave.

Chart #36: 8-Tone Scales by 1st Tetrachord, Intervals, & Formula* (cont'd)

1st Tet	Con Int	2nd Tet	Intervals					#	Name
(1)	-1-1-	mN ..	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	-1-1-	$\frac{1}{2}$ -1-1	.....		106	Phrygian 8-Tone #1
(1)	-1- $\frac{1}{2}$ -	W ...	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	-1- $\frac{1}{2}$ -	1-1-1	.....		105	Locrian 8-Tone #1
(2)	- $\frac{1}{2}$ -1-	M ...	$\frac{1}{2}$ - $\frac{1}{2}$ -1	- $\frac{1}{2}$ -1-	1-1- $\frac{1}{2}$	.....		104	Hindu
(2)	-1- $\frac{1}{2}$ -	M ...	$\frac{1}{2}$ - $\frac{1}{2}$ -1	-1- $\frac{1}{2}$ -	1-1- $\frac{1}{2}$	.....		107	Hindu
(5)	- $\frac{1}{2}$ -1-	M +1	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	-1-	1-1- $\frac{1}{2}$	-1 ...	**#119		Scotch Bagpipe Tuning
(7)	-1- $\frac{1}{2}$ -	m ...	1- $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ -1-	1- $\frac{1}{2}$ -1	.....		123	Dorian 8-Tone #1
(7)	-1- $\frac{1}{2}$ -	m ...	1- $\frac{1}{2}$ - $\frac{1}{2}$	-1- $\frac{1}{2}$ -	1- $\frac{1}{2}$ -1	.....		121	Jobim's
(7)	- $\frac{1}{2}$ -1-	mN ..	1- $\frac{1}{2}$ - $\frac{1}{2}$	- $\frac{1}{2}$ -1-	$\frac{1}{2}$ -1-1	.....		122	Aeolian 8-Tone #1
(7)	-1- $\frac{1}{2}$ -	1-1-1 .	1- $\frac{1}{2}$ - $\frac{1}{2}$	-1- $\frac{1}{2}$ -	1-1-1	.....	**108		Portuguese

*For explanation of tetrachords see page 23-24

End of Chart #36

**More than an octave

NOTE: Remember, each scale can be looked up by its Scale Number (#1 to #198) in The Grand Finale, which contains all of the information there is in this book about each scale in this book. The Grand Finale starts on page 545 for the 8-Tone Scales (#104 - #136).

8-TONE SCALES IN MODAL SERIES **CHART #37**

MODAL SERIES #	#	NAME	INTERVALS
MS 8-I:	1	131 Ryo 8-Tone	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2	123 Dorian 8-Tone #1	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	3	106 Phrygian 8-Tone #1	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1
	4	107 Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	5	116 'Iraq	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	136 Mixolydian 8-Tone	1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	128 Aeolian 8-Tone #2	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	114 Locrian 8-Tone #2	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
MS 8-II:	1	129 Isfahan	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	2	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	3	134 Bop Scale	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	111 Spanish 8-Tone	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	6	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	7	*	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	8	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 8-III:	1	133 Hindu	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2	122 Aeolian 8-Tone #1	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	3	105 Locrian 8-Tone #1	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1
	4	104 Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	5	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	130 Dorian 8-Tone #2	1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	117 Phrygian 8-Tone #2	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	132 Hindu	1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 8-IV:	1	110 Espla's	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	2	*	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	3	*	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1
	4	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	5	*	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	*	1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	*	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	*	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
MS 8-V:	1	125 Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	109 Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	3	125 Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	109 Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	125 Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	6	109 Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	7	125 Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	109 Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1

*These intervals are backwards of a known scale's, see Chapter 19 (cont'd)

Chart #37: 8-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 8-VI:	1	115 Zirafkand	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3	126 Composite #2	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	4	113 Composite #1	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	5	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	6	112 Latin American	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
MS 8-VII:	1	127 Arabic	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	3	*	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	121 Jobim's	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	6	*	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	7	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 8-VIII:	1	120 Irak	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	*	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
MS 8-IX:	1	118 Buzurg	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	3	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1

*These intervals are backwards of a known scale's, see Chapter 19 End of Chart #37

NOTE: Remember, each scale can be looked up by its Scale Number (#1 to #198) in The Grand Finale, which contains all of the information there is in this book about each scale in this book. The Grand Finale starts on page 545 for the 8-Tone Scales (#104 - #136.)

CHAPTER 15

CHARTS OF 9-TONE SCALES & 10-TONE SCALES ONLY

(Scales #137 - #149 & Scales #150 - #152)

Contents of Chapter 15:

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A FEW PRELIMINARIES REGARDING 9-TONE SCALES

Definition:

A 9-Tone Scale is a scale made up of three conjunct (overlapping) tetrachords. Another definition would be that a 9-Tone Scale consists of 7 *different* notes (tones) plus alterations of two of the notes plus the octave note. Occasionally, however, as in Scale #149, a 9-Tone Scale is a 7-Tone Scale with two different notes either above or below the octave.

Example of a 9-Tone Scale:

C - D - E - F - F \sharp - G - A - B \flat - B - c	= Notes involved
\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow	= Intervals involved
1 - 1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$	= Tetrachords involved
<div><div><div></div><div></div><div></div><div></div></div><div>M</div></div> - <div><div><div></div><div></div><div></div><div></div></div><div>(2)</div></div> - <div><div><div></div><div></div><div></div><div></div></div><div>(1)</div></div>	(see pages 23-24)

Therefore: The SYMBOL = Major 4 4+ 7- 7
 The FORMULA = M - (2) - (1)

and these identify: Scale #147 Ryo 9-Tone

What is in Chapter 15:

There are a total of five charts in Chapter 15. The first three are charts containing only 9-Tone Scales. The last two charts contain only 10-Tone Scales. (See page 187 for information on 10-Tone Scales.)

There are 13 different 9-Tone Scales. Each of these scales appears on each of the first two "9-Tone Charts". The three 9-Tone Scales that are more than an octave do not appear on the third chart, Chart #40, "Modal Series".

NOTE: Each scale can be looked up by its Scale Number (#1 - #198) in The Grand Finale. The Grand Finale starts on page 599 for 9-Tone Scales (#137 - #149) and contains all of the information that I have in this book about each scale.

**9-TONE SCALES NUMERICALLY, BY ALTERED SCALE POINTS
(by SYMBOL)**

CHART #38

*#	NAME	SYMBOL
---1---		
*#137	Tcherepnin	Major 1 1+ 2+ 5 5+
---2---		
138	Locrian 9-Tone	Major 2- 2 3- 5- 5 6- 7-
139	Phrygian 9-Tone	Major 2- 2 3- 6- 6 7-
140	Hindu	Major 2- 2 4 4+
141	Hindu	Major 2- 2 4+ 6- 6
---3---		
142	Auxiliary Blues	Major 3- 3 4 4+ 7-
143	Bartok's 9-Tone	Major 3- 3 5- 5
144	Aeolian 9-Tone	Major 3- 3 6- 6 7-
145	Dorian 9-Tone	Major 3- 3 7- 7
146	Armenian, Ancient Church	Major 3- 7- 9- 10-
---4---		
147	Ryo 9-Tone (Japan)	Major 4 4+ 7- 7
---6---		
**148	Tudor Scale	Major low 6 7, high 3- 6- 7-
**149	Adonai Malakh (Jewish)	Major low 6 7, high 7-

*Use Scale Numbers to locate scales in End of Chart #38
 The Grand Finale, starting page 599 for 9-Tone Scales
 **more than an octave

9-TONE SCALES BY TETRACHORDS**, FORMULA, & INTERVALS

CHART #39

(FORMULA)			INTERVALS	#	NAME
1st TET	2nd TET	3rd TET			
M	- (2)	- (1)	1-1-½ - ½-½-1 - ½-½-½	*#147	Ryo 9-Tone
Dim	- Dim	- Dim	½-1-½ - ½-1-½ - ½-1-½	137	Tcherepnin
(1)	- (7)	- Mn	½-½-½ - 1-½-½ - ½-1-1	138	Locrian 9-Tone
(1)	- M	- (2)	½-½-½ - 1-1-½ - ½-½-1	139	Phrygian 9-Tone
(2)	- (1)	- M	½-½-1 - ½-½-½ - 1-1-½	140	Hindu
(2)	- (7)	- Dim	½-½-1 - 1-½-½ - ½-1-½	141	Hindu
(7)	- (1)	- M	1-½-½ - ½-½-½ - 1-1-½	143	Bartok's 9-Tone
(7)	- (1)	- m	1-½-½ - ½-½-½ - 1-½-1	142	Auxiliary Blues
(7)	- mN	- (1)	1-½-½ - ½-1-1 - ½-½-½	145	Dorian 9-Tone
(7)	- Dim	- (2)	1-½-½ - ½-1-½ - ½-½-1	144	Aeolian 9-Tone

More than an octave:

m	-1-	m, ½-1	. . . .	1-½-1	-1-	1-½-1, ½-1	. . . . .	146	Armenian, Anct. Ch.
1-½, M	-1-	m	. . . .	1-½, 1-1-½	-1-	1-½-1	. . . . .	149	Adonai Malakh
1-½, m	-1-	mN	. . .	1-½, 1-½-1	-1-	½-1-1	. . . . .	148	Tudor Scale

End of Chart #39

*NOTE: Use Scale Numbers to look up scales in The Grand Finale, starting on page 599 for 9-Tone Scales

**NOTE: See pages 23-24 for explanations of Tetrachords and their signs (which make the Formula).

9-TONE SCALES IN MODAL SERIES***

CHART #40

MODAL SERIES #	*#	NAME	INTERVALS
MS 9-I:	1	*#139 Phrygian 9-Tone	..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	2	141 Hindu	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	**	..... $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	4	147 Ryo 9-Tone	..... 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	5	144 Aeolian 9-Tone	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	6	138 Locrian 9-Tone	..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	7	140 Hindu	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	8	**	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	9	145 Dorian 9-Tone	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
MS 9-II:	1	137 Tcherepnin's	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	2		..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	4	137 Tcherepnin's	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	5		..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	6		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	7	137 Tcherepnin's	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	8		..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	9		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 9-III:	1	142 Auxiliary Blues	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	3		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	4		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	5		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6		..... $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7		..... 1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	8		..... $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	9		..... 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 9-IV:	1	143 Bartok's	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	3		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4		..... $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	5		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6		..... $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7		..... 1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	8	**	..... 1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	9		..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1

*Use numbers to find scales in Grand Finale, page 599

End of Chart #40

**These intervals are backwards of a known scale's, see Chapter 19

***For more about Modal Series & Modal Series Numbers, see Chapter 20, page 259

A FEW PRELIMINARIES REGARDING 10-TONE SCALES

Definition:

A 10-Tone Scale is a scale made up of a 7-Tone Scale plus three additional notes outside of the octave. At least one of these additional notes will have a consistently different scale point alteration from the same note within the octave. (For example, E \flat *within* the octave as opposed to just E if going *above* the octave.) A definition of a 10-Tone Scale could be "a 7-Tone Scale with an additional different conjunct (overlapping) tetrachord above or below the octave".

There are probably many more 10-Tone Scales, but I really have no interest in them, so I didn't look for them. To me, they aren't "scales", but I figured I should have some in this book.

The following two charts contain a total of three different 10-Tone Scales. Each scale appears on both charts.

NOTE: Each scale can be looked up by its Scale Number (#150 to #152) in The Grand Finale, which contains all of the information about each scale. The 10-Tone Scales start on page 623 in The Grand Finale.

10-TONE SCALES NUMERICALLY, BY ALTERED SCALE POINTS

(by SYMBOL)

CHART 41

#	NAME	SYMBOL	COMMENT
150	Algerian	Major 3- 4+ 6- 9 10- 11	see #40
151	Armenian, Anct. Church	Major 3- 5- 7- 8- 9- 10- 11	---
152	Russian liturgical	Major 7- 9 10- 11	see #62

10-TONE SCALES BY 1ST TETRACHORD & INTERVALS

(by FORMULA)

CHART #42

1st Tet	Con Int	2nd Tet	3rd Tet	INTERVALS				#	NAME
M	-1-	m	m ..	1-1- $\frac{1}{2}$	-1-	1- $\frac{1}{2}$ -1	-1- $\frac{1}{2}$ -1	... #152	Russian Liturgical
m	-1-	(13)	W ..	1- $\frac{1}{2}$ -1	- $\frac{1}{2}$ -	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1	-1-1-1	.... 151	Armenian, Anct. Church
(8)	- $\frac{1}{2}$ -	mH	m ..	1- $\frac{1}{2}$ -1 $\frac{1}{2}$	- $\frac{1}{2}$ -	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1	-1- $\frac{1}{2}$ -1 150	Algerian

SECTION D

ETHNIC GROUPS & ETHNIC SCALES

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CHAPTER 16

PRELUDE TO THE ETHNIC GROUPS/SCALES OUTLINE

CONTENTS OF CHAPTER 16:

Explanation of Ethnic Groups/Scales Outline	Page 193
Chart #43: Non-Ethnic Scales	195
Alphabetical List of Ethnic Groups in the Ethnic Groups/Scales Outline	196

DISCLAIMER: The names used for countries and ethnic groups are the ones found in the sources that were used. If some of these names are obsolete now, please don't just discredit what is recorded here. Remember that the authors of those sources wrote about the world as it was when they wrote, not about what it was to be 20 or 50 years later. They were not prophets!

AN EXPLANATION OF THE ETHNIC GROUPS/SCALES OUTLINE

Most scales are ethnic scales -- they can be found in the folk music of one or more countries or ethnic groups. Why do I differentiate between countries and ethnic groups? The answer really is obvious if one just stops to think about it. A country can contain many different ethnic groups -- and I don't mean just the United States. For an example, an area might be Great Britain. The countries are England, Scotland, and Ireland with Wales thrown in as a sub-country. The further ethnic groups are Celts and Gaelic.

The Ethnic Groups/Scales Outline is a list of areas, countries and ethnic groups with the scales they use. It is arranged alphabetically by ten general geographical locations. The ten general geographical areas (Far East, Europe, etc.) are further divided (in outline form) into smaller groups and/or sub-groups. Then, beside each group is a list of the scales that I have been able to find that are used by that particular group. The scales I list were all found by me in some source material. I want to state clearly that I know that this *cannot be a complete list* -- but it is all that I found in my source materials.

Many scales are used by several different countries. These scales are listed beside each country (that I could find) that uses them. Of the 198 scales in this book, all except 31 scales have been found as "Ethnic Scales". This makes sense, since most music started as "folk music". For a list of the 31 Non-Ethnic (Synthetic) Scales, see Chart #43 on the next page.

By the way, the scales of the diatonic mode are frequently found in old folk music, especially that of Europe and Great Britain. These scales were also the old Ecclesiastical Scales and were carried wherever the Roman Catholic Church went. It is felt that they often crowded out the "original" folk scales. This may explain why the six most common scales in the Ethnic Groups/Scales Outline are all from the Diatonic Modes. See Section F, starting on page 345, for more about the Diatonic Modes.

The Ethnic scales and the groups where they are found are listed in (for lack of a better name!) the Ethnic Groups/Scales Outline. Each scale is listed in the Ethnic Groups/Scales Outline with three things:

1. Its NAME
2. Its NUMBER
3. Its SYMBOL

Summaries of some aspects of the Ethnic Groups/Scales Outline are found at the end of this section following the Outline itself.

NOTE: Concerning Quarter Tones

As noted in Criticisms #8 and #9 on page 15, many scales involve quarter tones. However, this book has been arranged so that the scales may all be used on the piano as well as on any other instrument set for the Western 12 tone octave. Yes, I know that this is not always completely accurate, since many ethnic scales are played on wind instruments or stringed instruments which are tuned for more than 12 tones in an octave, but that shouldn't mean that a pianist and others can't closely approximate all of the ethnic music. The Cent system would have to be used to be completely accurate, and that is not possible (or would be difficult or impractical) with some common, much used, Western instruments. I am aware that the purist will not like this, and I extend my apologies to him and sympathize with him. However, this books is for "Everyman", not just the specialist.

REMEMBER: The NUMBER allows the reader to refer to The Grand Final (starting on page 405) in order to look up more information regarding each particular scale. And the SYMBOL shows how that scale differs from the Major Scale.

I know that this is a repetition, but for your convenience, the Numbering System for the scales of this book is:

#1 -	#63	are	7-Tone Scales
#64 -	#103	are	6-Tone Scales
#104 -	#136	are	8-Tone Scales
#137 -	#149	are	9-Tone Scales
#150 -	#152	are	10-Tone Scales
#153 -	#198	are	5-Tone Scales

A WORD ABOUT NON-ETHNIC (SYNTHETIC) SCALES

Of the 198 scales in this book, there are only 31 scales (15.7%) that I could not find used by some ethnic group. These 31 non-ethnic scales are listed in Chart #43, below. (The Scale Number can be used to look up that scale in The Grand Finale, starting on page 405.)

NON-ETHNIC SCALES

CHART #43

SCALE #	NAME
6	Neapolitan-Major
14	Neapolitan-minor
19	Enigmatic (Verdi)
24	Enigmatic, Descending-Inverted
38	Conway's 7-Tone
45	Half-Diminished
52	Lydian-Augmented
53	Leading Whole-Tone
56	Ionian-Augmented
79	Prometheus-Neapolitan
80	Augmented
82	6-Tone Symmetrical
97	Whole Tone
98	Prometheus (Scriabin)
109	Diminished #2
113	Composite #1
124	Conway's 8-Tone
126	Composite #2
134	Bop Scale
137	Tcherepnin
142	Auxiliary Blues
143	Bartok's 9-Tone
153	Semitonal Pentatonic #4
166	Jazz minor Pentatonic
169	Diminished Pentatonic
170	Jazz Dominant Pentatonic
174	Pentatonic-Dominant
176	Dominant Pentatonic
177	Scriabin
187	Semitonal Pentatonic #2
193	Jazz Pentatonic

End of Chart #43

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CHAPTER 17

THE ETHNIC GROUPS/SCALES OUTLINE

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TWO NOTES REPEATED FOR CONVENIENCE:

NOTE: 7-Tone Scales are #1 - #63
 6-Tone Scales are #64 - #103
 8-Tone Scales are #104 - #136
 9-Tone Scales are #137 - #149
 10-Tone Scales are #150 - #152
 5-Tone Scales are #153 - #198

NOTE: Scale Numbers may be used to obtain additional information on individual scales by looking them up numerically in The Grand Finale, starting on page 405.

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ETHNIC GROUPS/SCALES OUTLINE

I. Africa

A. Algeria	*# 1	Major	Major
		49	Natural minor	Major 3- 6- 7-
		40	Hungarian minor	Major 3- 4+ 6-
		50	Dorian	Major 3- 7-
		150	Algerian	Major 3- 4+ 6- 9 10- 11
B. Black Africa	.....	# 65	African	Major 2omit 3-
		76	African	Major 2- 3- 7omit
		102	Mixolyd 6-Tn	Major 6omit 7-
		154	Japanese	Major 2omit 3- 4omit 5- 6- 7-
		173	Hirajoshi #5	Major 2omit 4+ 6omit
		178	Hirajoshi #3	Major 2omit 5omit
		180	Pelog #5	Major 2omit 6omit
		185	African	Major 4omit 3- 6omit 7-
		191	Pentatonic #4	Major 3omit 6omit 7-
		192	Pentatonic #1	Major 3omit 7omit
		196	African	Major 4omit 6omit 7-
		197	Pentatonic #3	Major 4omit 7omit
		198	African	Major 5omit 7omit
C. Egypt	.....	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
		184	Hirajoshi #1	Major 3- 4omit 6- 7omit
		191	Pentatonic #4	Major 3omit 6omit 7-
D. Ethiopia				
1. General	.....	#1	Major	Major
2. Church	.....	#42	Greek	Major 3- 4+ 6- 7-
		49	Natural minor	Major 3- 6- 7-
E. Morocco	.....	#15	Phrygian	Major 2- 3- 6- 7-
		49	Natural minor	Major 3- 6- 7-
F. Tunisia	.....	#46	Zangula	Major 3- 5- 7-

II. America

A. Latin America				
1. General	.....	#112	Latin American	Major 2- 3- 3 7-
2. Mexico				
a. Mayans	.....	#197	Pentatonic #3	Major 4omit 7omit
b. Mexican Indians, Gen.	#197	Pentatonic #3	Major 4omit 7omit	
c. Modern Mexico	..	#1	Major	Major
		62	Mixolydian	Major 7-
B. South America				
1. Argentina	.....	#40	Hungarian minor	Major 3- 4+ 6-

Ethnic Groups/Scales Outline (cont'd)

II. America (cont')

B. South America** (cont'd)

2. Brazil *# 1 Major Major
121 Jobim's Major 3- 3 4+ 7-
3. Peru (Indians) #49 Natural minor Major 3- 6- 7-

C. United States of America

1. African-American Slaves . #15 Phrygian Major 2- 3- 6- 7-
49 Natural minor Major 3- 6- 7-
50 Dorian Major 3- 7-
51 Lydian Major 4+
62 Mixolydian Major 7-
63 Negro Spiritual Major [7-/7]
96 Scotch Major 4omit
103 Guido's Major 7omit
197 Pentatonic #3 Major 4omit 7omit
2. American Indians . . # 92 Greek Major 3- 6omit 7-
154 Japanese Major 2omit 3- 4omit 5- 6- 7-
158 Pentatonic #5 Major 2omit 3- 5omit 6- 7-
164 Pentatonic #2 Major 2omit 3-6omit 7-
182 Bulgarian Major 2omit 7omit
191 Pentatonic #4 Major 3omit 6omit 7-
192 Pentatonic #1 Major 3omit 7omit
197 Pentatonic #3 Major 4omit 7omit
3. Appalachian Mts.(So) . . # 1 Major Major
34 Melodic minor Major 3-
49 Natural minor Major 3- 6- 7-
50 Dorian Major 3- 7-
51 Lydian Major 4+
62 Mixolydian Major 7-
64 Appalachian Major [2-/2] 3- 6omit 7-
75 Irish Major 2omit 3- 6- 7-
77 Dorian 6-Tone Major 2omit 3- 7-
86 Ionian 6-Tone Major 3omit
87 Appalachian Major [3-/3] 7omit
90 Aeolian 6-Tone Major 3- 5omit 6- 7-
95 Appalachian Major 3omit 7-
99 Lydian 6-Tone Major 4+ 7omit
101 Appalachian Major 4omit [7-/7]
102 Mixolydian 6-Tn Major 6omit 7-
158 Pentatonic #5 Major 2omit 3- 5omit 6- 7-
164 Pentatonic #2 Major 2omit 3- 6omit 7-
191 Pentatonic #4 Major 3omit 6omit 7-
192 Pentatonic #1 Major 3omit 7omit
197 Pentatonic #3 Major 4omit 7omit

*Use Scale Numbers to look up scales in The Grand Finale, starting on page 405

(cont'd)

**Groves Dict mentions "the pentatonic scale" many times as being an "ancient scale" for the Incas and other Indians, but gave no intervals or notes.

Ethnic Groups/Scales Outline (cont'd)

II. America (cont')			
C. United States of America (cont'd)			
4. Black Americans . .	*#18	Blues	Major 2+ 4 4+ 6omit 7-
	66	Blues	Major 2omit 3- 4 4+ 6omit 7-
III. Australian Aborigines			
	#103	Guido's Scale	Major 7 omit
	190	Kumoi #4	Major 3omit 6- 7omit
IV. Europe			
A. Austria	#51	Lydian	Major 4+
B. Bulgaria			
1. General	#15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian (rare)	Major 4+
2. Specific			
a. Central Bulgaria .	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
	182	Bulgarian	Major 2omit 7omit
	192	Pentatonic #1	Major 3omit 7omit
	197	Pentatonic #3	Major 4omit 7omit
b. Southern Bulgaria	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
c. Old Church singing	#30	Double Harmonic	Major 2- 6-
	33	Arabic	Major 2- 7-
C. Byzantia	#11	Byzantine	Major 2- 3- 4- 6- 7-
	30	Double Harmonic	Major 2- 6-
	61	Hindustan	Major 6- 7-
D. Estonia	#49	Natural minor	Major 3- 6- 7-
E. Flanders	#62	Mixolydian	Major 7-
F. France	# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-
G. Germany	# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	34	Melodic minor	Major 3-
	47	Harmonic minor	Major 3- 6-
	50	Dorian	Major 3- 7-

*Use Scale Number to locate scale in The Grand Finale, starting page 405

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IV. Europe (cont'd)

H. Greece

1. Ancient	*#1	Major	Major
3	Chrm. Mixolydian	Major 2-	2 3+ 4+ 6+ 7omit
4	Chromatic Dorian	Major 2-	2 3omit 6- 6 7omit
9	Chr. Hypophrygian	Major 2+	3+ 4+ 6+
12	Locrian (rare)	Major 2-	3- 5- 6- 7-
15	Phrygian	Major 2-	3- 6- 7-
20	Chrm. Hypolydian	Major 2-	4+ 6-
23	Chrm. Lydian	Major 2-	5-
25	Chrm Phrygian	Major 2+	5+ 6+
30	Double Harmonic	Major 2-	6-
41	Chrm. Hypodorian	Major 3-	4- 6- 6 7omit
48	Ptolemy's	Major 3-	6- 6 7omit
49	Natural minor	Major 3-	6- 7-
50	Dorian	Major 3-	7-
51	Lydian	Major 4+	
62	Mixolydian	Major 7-	
149	Adonai Malakh	Major low 6 7,	high 7-
162	Hirajoshi #4	Major 2-	3omit 6- 7omit
178	Hirajoshi #3	Major 2omit	5omit

2. Non-Ancient	# 1	Major	Major
12	Locrian (rare)	Major 2-	3- 5- 6- 7-
13	Hijazi	Major 2-	3- 5- 7-
15	Phrygian (rare)	Major 2-	3- 6- 7-
30	Double Harmonic	Major 2-	6-
31	Spanish	Major 2-	6- 7-
33	Arabic	Major 2-	7-
37	Lydian-Diminished	Major 3-	4+
40	Hungarian-minor	Major 3-	4+ 6-
42	Greek	Major 3-	4+ 6- 7-
43	Greek	Major 3-	4- 6- 7-
44	Roumanian-minor	Major 3-	4+ 7-
49	Natural minor		
	(one of main)	Major 3-	6- 7-
50	Dorian		
	(one of main)	Major 3-	7-
51	Lydian (rare)	Major 4+	
62	Mixolydian (rare)	Major 7-	
84	Greek	Major 2-	6omit 7-
92	Greek	Major 3-	6omit 7-

I. Gypsy	#30	Double Harmonic	Major 2-	6-
	31	Spanish	Major 2-	6- 7-
	40	Hungarian-minor	Major 3-	4+ 6-

J. Hungary	# 1	Major	Major				
	15	Phrygian (rare)	Major	2-	3-	6-	7-
	22	Hungarian-Major	Major	2+	4+	7-	
	30	Double Harmonic	Major	2-	6-		

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IV. Europe (cont'd)

J. Hungary (cont'd)	*#34	Melodic minor	Major 3-
	40	Hungarian-minor	Major 3- 4+ 6-
	47	Harmonic minor	Major 3- 6-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	62	Mixolydian	Major 7-
	92	Greek	Major 3- 6omit 7-
	94	Hungarian	Major 3- 7omit
	164	Pentatonic #2	Major 2omit 3- 6omit 7-

K. Italy

1. General	# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	34	Melodic minor	Major 3-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-

2. Specific

a. Arezzo	#35	Arezzo	Major [3-/3]
b. Naples	#15	Phrygian	Major 2- 3- 6- 7-
c. Sicily	#16	Javanese	Major 2- 3- 7-

L. Magyars	#50	Dorian	Major 3- 7-
	95	Appalachian	Major 3omit 7-
	164	Pentatonic #2	Major 2omit 3- 6omit 7-

M. Netherlands	#15	Phrygian	Major 2- 3- 6- 7-
	50	Dorian (frequent)	Major 3- 7-
	51	Lydian	Major 4+

N. Portugal	{#12	Locrian, ascend.	Major 2- 3- 5- 6- 7-}
	{ 15	Phrygian, desc.	Major 2- 3- 6- 7- }
	49	Natural minor	Major 3- 6- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-
	83	Bangala	Major 2- 6- 7omit
	108	Portuguese	Major 2 2+ 4+ 8+

O. Roumania	#22	Hungarian-Major	Major 2+ 4+ 7-
	31	Spanish	Major 2- 6- 7-
	32	Roumanian-Major	Major 2+ 7-
	44	Roumanian-minor	Major 3- 4+ 7-
	50	Dorian	Major 3- 7-
	54	Lydian-minor	Major 4+ 6- 7-
	55	Overtone	Major 4+ 7-
	197	Pentatonic #3	Major 4omit 7omit

P. Scandinavia

1. Denmark	# 1	Major	Major
	49	Natural minor	Major 3- 6- 7-

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IV. Europe (cont'd)

P. Scandinavia (cont'd)

1. Denmark (cont'd) . . .	*#50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
2. Finland	#49	Natural minor	Major 3- 6- 7-
	103	Guido's	Major 7omit
3. Iceland	#12	Locrian (rare)	Major 2- 3- 5- 6- 7-
	51	Lydian (most)	Major 4+
4. Norway	#50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	60	Harmonic-Major	Major 6-
5. Sweden	#12	Locrian (rare)	Major 2- 3- 5- 6- 7-
	47	Harmonic minor	Major 3- 6-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	62	Mixolydian	Major 7-

Q. Slavic

1. Czechoslovakia	# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian (main)	Major 4+
	60	Harmonic-Major	Major 6-
	62	Mixolydian	Major 7-
	194	India	Major 4omit 6omit
2. Moravia	#49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
3. Poland	#1	Major	Major
	7	Polish	Major 2- [3-/3] 6- 7-
	15	Phrygian (rare)	Major 2- 3- 6- 7-
	31	Spanish	Major 2- 6- 7-
	47	Harmonic minor	Major 3- 6-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian (main)	Major 4+
	62	Mixolydian	Major 7-
	85	Polish	Major 2omit 7-
	192	Pentatonic #1	Major 3omit 7omit
4. Russia			
a. General	#1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IV. Europe (cont'd)

Q. Slavic (cont'd)

4. Russia (cont'd)

a. General	*#60	Harmonic-Major	Major 6-
	93	Glinka's	Major 3- 6- 7omit

b. Church	#103	Guido's	Major 7omit
	152	Russian liturgy	Major 7- 9 10- 11

5. Slovakia	#15	Phrygian	Major 2- 3- 6- 7-
	47	Harmonic minor	Major 3- 6-
	50	Dorian	Major 3- 7-
	51	Lydian (main)	Major 4+
	62	Mixolydian	Major 7-
	92	Greek	Major 3- 6omit 7-
	191	Pentatonic #4	Major 3omit 6omit 7-
	197	Pentatonic #3	Major 4omit 7omit

6. Yugoslavia	#15	Phrygian	Major 2- 3- 6- 7-
	34	Melodic minor	Major 3-

R. Spain

1. General	# 1	Major	Major
	8	Super-Locrian	Major 2- 3- 4- 5- 6- 7-
	15	Phrygian	Major 2- 3- 6- 7-
	31	Spanish	Major 2- 6- 7-
	47	Harmonic minor	Major 3- 6-
	50	Dorian	Major 3- 7-
	62	Mixolydian	Major 7-
	110	Espla's	Major 2- 3- 3 5- 6- 7-
	111	Spanish 8-Tone	Major 2- 3- 3 6- 7-

2. Specific

a. Andalusia	#15	Phrygian	Major 2- 3- 6- 7-
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b. Basque	# 1	Major	Major
	36	Basque	Major [3-/3] 7-
	47	Harmonic minor	Major 3- 6-
	49	Natural minor	Major 3- 6- 7-

c. Castile	#15	Phrygian	Major 2- 3- 6- 7-
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d. Galicia	# 1	Major	Major
	15	Phrygian	Major 2-3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	62	Mixolydian	Major 7-

S. Thrace	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
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T. Transylvania	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
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Ethnic Groups/Scales Outline (cont'd)

V. Far East

A. China

1. General	*# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-
	158	Pentatonic #5	Major 2omit 3- 5omit 6- 7-
	163	Kumoi #2	Major 2- 3omit 6omit 7-
	164	Pentatonic #2	Major 2omit 3- 6omit 7-
	173	Hirajoshi #5	Major 2omit 4+ 6omit
	191	Pentatonic #4	Major 3omit 6omit 7-
	192	Pentatonic #1	Major 3omit 7omit
	197	Pentatonic #3	Major 4omit 7omit
2. Chou Dynasty	#51	Lydian	Major 4+

B. Japan

1. General	# 1	Major	Major
	12	Locrian	Major 2- 3- 5- 6- 7-
	15	Phrygian	Major 2- 3- 6- 7-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-
	73	In Scale	Major 2- 3omit 6- 7-
	88	Akebono	Major 3- 4omit 7-
	93	Glinka's	Major 3- 6- 7omit
	103	Guido's	Major 7omit
	131	Ryo 8-Tone	Major 4 4+
	147	Ryo 9-Tone	Major 4 4+ 7- 7
	154	Japanese	Major 2omit 3- 4omit 5- 6- 7-
	155	Pelog #1	Major 2- 3- 4omit 6- 7omit
	156	Pelog #4	Major 2- 3omit 5- 6- 7omit
	157	Hirajoshi #2	Major 2- 3omit 5- 6omit 7-
	158	Pentatonic #5	Major 2omit 3- 5omit 6- 7-
	159	Kumoi #5	Major 2omit 3- 5- 6omit 7-
	162	Hirajoshi #4	Major 2- 3omit 6- 7omit
	163	Kumoi #2	Major 2- 3omit 6omit 7-
	164	Pentatonic #2	Major 2omit 3- 6omit 7-
	165	Japanese Pent.#4	Major 2- 3omit 7omit
	167	Kumoi #3	Major 2omit 4+ 5omit
	168	Japanese Pent.#5	Major 2omit 4+ 5+ 6omit
	171	Japanese Pent.#3	Major 2+ 4omit 5+ 6+ 7omit
	173	Hirajoshi #5	Major 2omit 4+ 6omit
	178	Hirajoshi #3	Major 2omit 5omit
	179	Pelog #3	Major 2omit 5omit 7-
	180	Pelog #5	Major 2omit 6omit
	183	Pelog #2	Major 3omit 4+ 6omit
	184	Hirajoshi #1	Major 3- 4omit 6- 7omit

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

V. Far East (cont'd)

B. Japan (cont'd)

1. General (cont'd)	*#186	Kumoi #1	Major 3- 4omit 7omit
	188	Japanese Pent.#2	Major 3omit 5- 6omit 7-
	189	Semitonal Pent.#5	Major 3omit 6omit
	190	Kumoi #4	Major 3omit 6- 7omit
	191	Pentatonic #4	Major 3omit 6omit 7-
	192	Pentatonic #1	Major 3omit 7omit
	195	Japanese Pent.#1	Major 4omit 6- 7omit
	197	Pentatonic #3	Major 4omit 7omit

2. Koto tuning	#162	Hirajoshi #4	Major 2- 3omit 6- 7omit
	163	Kumoi #2	Major 2- 3omit 6omit 7-

C. Korea	#164	Pentatonic #2	Major 2omit 3- 6omit 7-
	186	Kumoi #1	Major 3- 4omit 7omit
	192	Pentatonic #1	Major 3omit 7omit
	197	Pentatonic #3	Major 4omit 7omit

D. Mongolia	# 1	Major	Major
	164	Pentatonic #2	Major 2omit 3- 6omit 7-
	197	Pentatonic #3	Major 4omit 7omit

VI. Great Britain

A. General	# 1	Major	Major
	49	Natural minor	Major 3- 6- 7-
	40	Dorian (main one)	Major 3- 7-
	62	Mixolydian	Major 7-

B. Specific

1. Celts	#192	Pentatonic #1	Major 3omit 7omit
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2. England	# 1	Major (50%)**	Major
	47	Harm. minor(2%)**	Major 3- 6-
	49	Nat. minor(20%)**	Major 3- 6- 7-
	50	Dorian (20%)**	Major 3- 7-
	62	Mixolydian(10%)**	Major 7-
	92	Greek	Major 3- 6omit 7-
	148	Tudor Scale	Major low 6 7, 3- 6- 7-

3. Gaelic	#49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-

4. Ireland	# 1	Major	Major
	15	Phrygian	Major 2- 3- 6- 7-
	49	Nat. minor(12%)	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-

(cont'd)

*Use Scale Numbers to look up scales in The Grand Finale, starting page 405

(cont'd)

**Only approximately, obviously!

Ethnic Groups/Scales Outline (cont'd)

VI. Great Britain (cont'd)		
B. Specific (cont'd)		
4. Ireland (cont'd) . .	*#72 Phrygian 6-Tone	Major 2- 3- 5omit 6- 7-
	75 Irish	Major 2omit 3- 6- 7-
5. Scotland		
a. General	#12 Locrian	Major 2- 3- 5- 6- 7-
	15 Phrygian	Major 2- 3- 6- 7-
	49 Natural minor	Major 3- 6- 7-
	50 Dorian	Major 3- 7-
	51 Lydian	Major 4+
	62 Mixolydian	Major 7-
	68 Locrian 6-Tone	Major 2- 3- 4omit 5- 6- 7-
	72 Phrygian 6-Tone	Major 2- 3- 5omit 6- 7-
	75 Irish	Major 2omit 3- 6- 7-
	77 Dorian 6-Tone	Major 2omit 3- 7-
	89 Overtone 6-Tone	Major 3omit 4+ 7-
	92 Greek	Major 3- 6omit 7-
	95 Appalachian	Major 3omit 7-
	96 Scotch	Major 4omit
	99 Lydian 6-Tone	Major 4+ 7omit
	100 Scotch	Major 4omit 7-
	102 Mixolydian 6-Tone	Major 6omit 7-
	103 Guido's	Major 7omit
	158 Pentatonic #5	Major 2omit 3- 5omit 6- 7-
	164 Pentatonic #2	Major 2omit 3- 6omit 7-
	191 Pentatonic #4	Major 3omit 6omit 7-
	192 Pentatonic #1	Major 3omit 7omit
	197 Pentatonic #3	Major 4omit 7omit
b. Bagpipe tuning .		
	# 50 Dorian	Major 3- 7-
	62 Mixolydian	Major 7-
	119 Scotch Bagpipe tuning	Major 2- 4+ 9
6. Wales		
	# 1 Major	Major
	49 Natural minor	Major 3- 6- 7-
	50 Dorian (most)	Major 3- 7-
	62 Mixolydian	Major 7-
VII. India (Hindu)		
	#1 Major	Major
	2 Ananda	Major 2-
	4 Chromatic Dorian	Major 2- 2 3omit 6- 6 7omit
	10 Raga Todi	Major 2- 3- 4+ 6-
	12 Locrian	Major 2- 3- 5- 6- 7-
	15 Phrygian	Major 2- 3- 6- 7-
	17 Marava	Major 2- 4+
	20 Chrm. Hypolydian	Major 2- 4+ 6-
	21 India	Major 2- 4+ 7-
	30 Double Harmonic	Major 2- 6-

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

VII. India (Hindu) (cont'd)	. . .	*#34	Melodic minor	Major 3-
		47	Harmonic minor	Major 3- 6-
		49	Natural minor	Major 3- 6- 7-
		50	Dorian	Major 3- 7-
		51	Lydian	Major 4+
		61	Hindustan	Major 6- 7-
		62	Mixolydian	Major 7-
		67	Vilasakhani	Major 2- 3- 4+ 5omit 6-
		70	Gurjari	Major 2- 3- 5omit 6-
		74	Samanta	Major 2- 3- 6- 7omit
		78	Panchana	Major 2- 4+ 5omit
		81	Combined-Altered	Major 2- 4+ 6- 7omit
		83	Bangala	Major 2- 6- 7omit
		95	Appalachian	Major 3omit 7-
		99	Lydian 6-Tone	Major 4+ 7omit
		103	Guido's	Major 7omit
		104	Hindu	Major 2- 2
		105	Locrian 8-Tone #1	Major 2- 2 3- 5- 6- 7-
		106	Phrygian 8-Tn. #1	Major 2- 2 3- 6- 7-
		107	Hindu	Major 2- 2 4+
		114	Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-
		117	Phrygian 8-Tn #2	Major 2- 3- 6- 6 7-
		122	Aeolian 8-Tone #1	Major 3- 3 6- 7-
		123	Dorian 8-Tone #1	Major 3- 3 7-
		128	Aeolian 8-Tone #2	Major 3- 6- 6 7-
		130	Dorian 8-Tone #2	Major 3- 7- 7
		132	Hindu	Major 4+ 6- 6
		133	Hindu	Major 5- 5 7-
		136	Mixolydian 8-Tone	Major 7- 7
		138	Locrian 9-Tone	Major 2- 2 3- 5- 5 6- 7-
		139	Phrygian 9-Tone	Major 2- 2 3- 6- 6 7-
		140	Hindu	Major 2- 2 4 4+
		141	Hindu	Major 2- 2 4+ 6- 6
		144	Aeolian 9-Tone	Major 3- 3 6- 6 7-
		145	Dorian 9-Tone	Major 3- 3 7- 7
		147	Ryo 9-Tone	Major 4 4+ 7- 7
		149	Adonai Malakh	Major low 6 7, high 7-
		155	Pelog #1	Major 2- 3- 4omit 6- 7omit
		158	Pentatonic #5	Major 2omit 3- 5omit 6- 7-
		161	Semitonal Pent.#1	Major 2omit 3- 5omit 7-
		164	Pentatonic #2	Major 2omit 3- 6omit 7-
		167	Kumoi #3	Major 2omit 4+ 5omit
		172	Vibhasa	Major 2- 4+ 5omit 7omit
		175	Rewa	Major 2- 4omit 6- 7omit
		189	Semitonal Pent.#5	Major 3omit 6omit
		191	Pentatonic #4	Major 3omit 6omit 7-
		192	Pentatonic #1	Major 3omit 7omit
		194	India	Major 4omit 6omit
		197	Pentatonic #3	Major 4omit 7omit
VIII. Indonesia				
A. Bali	. . . . .	#155	Pelog #1	Major 2- 3- 4omit 6- 7omit

*Use Scale Numbers to look up scales in The Grand Finale, starting page 405

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

VIII. Indonesia (cont'd)

B. Borneo	*#197	Pentatonic #3	Major 4omit 7omit
C. Java	# 1	Major	Major
	16	Javanese	Major 2- 3- 7-
	51	Lydian	Major 4+
	62	Mixolydian	Major 7-
	155	Pelog #1	Major 2- 3- 4omit 6- 7omit
	158	Pentatonic #5	Major 2omit 3- 5omit 6- 7-
	164	Pentatonic #2	Major 2omit 3- 6omit 7-
	173	Hirajoshi #5	Major 2omit 4+ 6omit
	180	Pelog #5	Major 2omit 6omit
	181	Semitonal Pent.#3	Major 2omit 6omit 7-
	183	Pelog #2	Major 3omit 4+ 6omit
	191	Pentatonic #4	Major 3omit 6omit 7-

IX. Near East

A. General ("Oriental") . . .	#27	Rahawi	Major 2- 5- 6- 7-
	28	Oriental	Major 2- 5- 7-
	30	Double Harmonic	Major 2- 6-
	40	Hungarian-minor	Major 3- 4+ 6-
B. Specific			
1. Arabic	# 1	Major	Major
	12	Locrian	Major 2- 3- 5- 6- 7-
	13	Hijazi	Major 2- 3- 5- 7-
	15	Phrygian	Major 2- 3- 6- 7-
	16	Javanese	Major 2- 3- 7-
	27	Rahawi	Major 2- 5- 6- 7-
	30	Double Harmonic	Major 2- 6-
	31	Spanish	Major 2- 6- 7-
	33	Arabic	Major 2- 7-
	34	Melodic minor	Major 3-
	44	Roumanian-minor	Major 3- 4+ 7-
	46	Zangula	Major 3- 5- 7-
	47	Harmonic minor	Major 3- 6-
	49	Natural minor	Major 3- 6- 7-
	50	Dorian	Major 3- 7-
	51	Lydian	Major 4+
	57	Locrian-Major	Major 5- 6- 7-
	58	Zenkla	Major 5- 7-
	59	Rummel-Meia	Major 5+ 7-
	61	Hindustan	Major 6- 7-
	62	Mixolydian	Major 7-
	69	Hidshaf	Major 2- 3- 4omit 5- 7-
	71	Abuselik	Major 2- 3omit 5- 6- 7-
	75	Irish	Major 2omit 3- 6- 7-
	94	Hungarian	Major 3- 7omit
	95	Appalachian	Major 3omit 7-
	103	Guido's	Major 7omit
	114	Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IX. Near East (cont'd)

B. Specific (cont'd)

- | | | | | |
|--------------------|-----------|------|-------------------|-----------------------------|
| 1. Arabic (cont'd) | . . * | #115 | Zirafkand | Major 2- 3- 5- 6- 6 |
| | | 116 | 'Iraq | Major 2- 3- 5- 6- 7- 7 |
| | | 118 | Buzurg | Major 2- 4 4+ |
| | | 120 | Irak | Major 2- 5- 6- 6 |
| | | 125 | Diminished #1 | Major 3- 5- 6- 6 |
| | | 127 | Arabic | Major 3- 6- 6 |
| | | 129 | Isfahan | Major 3- 6- 7- 7 |
| | | 136 | Mixolydian 8-Tone | Major 7- 7 |
| | | | | |
| 2. Armenia | | | | |
| a. General | | #30 | Double Harmonic | Major 2- 6- |
| | | 60 | Harmonic-Major | Major 6- |
| | | 61 | Hindustan | Major 6- 7- |
| b. Old Church | | #91 | Armenian | Major 3omit 6- |
| | | 146 | Anct Armenian Ch. | Major 3- 7- 9- 10- |
| | | 151 | Anct Armenian Ch. | Major 3- 5- 7- 8- 9- 10- 11 |
| | | | | |
| 3. Jewish | | # 1 | Major | Major |
| | | 5 | Jewish | Major [2/2+] 7- |
| | | 15 | Phrygian | Major 2- 3- 6- 7- |
| | | 30 | Double Harmonic | Major 2- 6- |
| | | 31 | Spanish | Major 2- 6- 7- |
| | | 37 | Lydian-Diminished | Major 3- 4+ |
| | | 40 | Hungarian-minor | Major 3- 4+ 6- |
| | | 47 | Harmonic minor | Major 3- 6- |
| | | 49 | Natural minor | Major 3- 6- 7- |
| | | 50 | Dorian | Major 3- 7- |
| | | 60 | Harmonic-Major | Major 6- |
| | | 62 | Mixolydian | Major 7- |
| | | 135 | Magon Abot | Major low 7, 3- 6- 7- |
| | | 149 | Adonai Malakh | Major low 6 7, high 7- |
| | | | | |
| 4. Persia | | # 1 | Major | Major |
| | | 12 | Locrian | Major 2- 3- 5- 6- 7- |
| | | 15 | Phrygian | Major 2- 3- 6- 7- |
| | | 16 | Javanese | Major 2- 3- 7- |
| | | 26 | Persian | Major 2- 5- 6- |
| | | 27 | Rahawi | Major 2- 5- 6- 7- |
| | | 29 | Persian | Major 2+ 5+ 7- |
| | | 30 | Double Harmonic | Major 2- 6- |
| | | 31 | Spanish | Major 2- 6- 7- |
| | | 34 | Melodic minor | Major 3- |
| | | 47 | Harmonic minor | Major 3- 6- |
| | | 49 | Natural minor | Major 3- 6- 7- |
| | | 51 | Lydian | Major 4+ |
| | | 58 | Zenkla | Major 5- 7- |
| | | 61 | Hindustan | Major 6- 7- |
| | | 62 | Mixolydian | Major 7- |

(cont'd)

Ethnic Groups/Scales Outline (cont'd)

IX. Near East (cont'd)

B. Specific (cont'd)

4. Persia (cont'd)	..	*#69	Hidshaf	Major 2- 3- 4omit 5- 7-
		71	Abuselik	Major 2- 3omit 5- 6- 7-
		114	Locrian 8-Tone #2	Major 2- 3- 5- 5 6- 7-
		115	Zirafkand	Major 2- 3- 5- 6- 6
		118	Buzurg	Major 2- 4 4+
		120	Irak	Major 2- 5- 6- 6
5. Turkey	..	#15	Phrygian	Major 2- 3- 6- 7-
		31	Spanish	Major 2- 6- 7-
		32	Roumanian-Major	Major 2+ 7-
		39	Turkish	Major 3- [4/4+] 7-
		40	Hungarian-minor	Major 3- 4+ 6-
		44	Roumanian-minor	Major 3- 4+ 7-
		46	Zangula	Major 3- 5- 7-
		49	Natural minor	Major 3- 6- 7-
		50	Dorian	Major 3- 7-
		60	Harmonic-Major	Major 6-
		164	Pentatonic #2	Major 2omit 3- 6omit 7-

X. Polynesia

A. General #192 Pentatonic #1 Major 3omit 7omit

B. Hawaii # 34 Melodic minor Major 3-
 186 Kumoi #1 Major 3- 4omit 7omit

*Use Scale Number to locate scales in
 The Grand Finale, starting on page 405

End of Ethnic Groups/Scales Outline

CHAPTER 18

POSTLUDE TO THE ETHNIC GROUPS/SCALES OUTLINE

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NUMBER OF TIMES THE SCALES ARE FOUND IN THE ETHNIC GROUPS/SCALES OUTLINE

CHART #44

Found 37 times . . .	*#50	Dorian	
Found 36 times	#49	Natural Minor	
Found 30 times	#15	Phrygian	
Found 29 times	#62	Mixolydian	
Found 28 times	#1	Major	
Found 25 times	#51	Lydian	
Found 17 times . . .	#164	Pentatonic #2	
Found 16 times . . .	#197	Pentatonic #3	
Found 12 times	#30	Double Harmonic	#192 Pentatonic #1
	47	Harmonic-minor	
Found 10 times	#12	Locrian	#191 Pentatonic #4
Found 9 times	#31	Spanish	#34 Melodic minor
	40	Hungarian-minor	
Found 8 times	#103	Guido's	
Found 7 times	#158	Pentatonic #5	
Found 6 times	#60	Harmonic-Major	#92 Greek
Found 5 times	#61	Hindustan	#95 Appalachian
Found 4 times	#16	Javanese	# 75 Irish
	44	Roumanian-minor	155 Pelog #1

*Remember, Scale Numbers can be used to look up individual scales
in The Grand Finale, starting on page 405

(cont'd)

Chart #44: Times Scales Found in Ethnic Groups/Scales Outline (cont'd)

Found 3 times # 27	Rahawi	#149	Adonai Malakh
(13 scales)	33 Arabic	154	Japanese
	46 Zangula	162	Hirajoshi #4
	99 Lydian 6-Tone	173	Hirajoshi #5
	102 Mixolydian 6-Tone	178	Hirajoshi #3
	114 Locrian 8-Tone #2	180	Pelog #5
		186	Kumoi #1
Found 2 times *# 4	Chromatic Dorian	94	Hungarian
(31 scales)	13 Hijazi	96	Scotch
	20 Chromatic Hypolydian	115	Zirafkand
	22 Hungarian-Major	118	Buzurg
	32 Roumanian-Major	120	Irak
	37 Lydian-Diminished	136	Mixolydian 8-Tone
	42 Greek	147	Ryo 9-Tone
	58 Zenkla	163	Kumoi #2
	69 Hidshaf	167	Kumoi #3
	71 Abuselik	182	Bulgarian
	72 Phrygian 6-Tone	183	Pelog #2
	77 Dorian 6-Tone	184	Hirajoshi #1
	83 Bangala	189	Semitonal Pent. #5
	86 Ionian 6-Tone	190	Kumoi #4
	90 Aeolian 6-Tone	194	India
	93 Glinka's		

Found 1 time -- 97 scales

Not found at all --31 scales (see Chart #43, page 195)

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

End of Chart #44

SUMMARY OF CHART #44 ON PREVIOUS PAGE

CHART #45

1 Scale found	37 times	in the Ethnic Groups/Scales Outline
1 Scale found	36 times	in the Ethnic Groups/Scales Outline
1 Scales found	30 times	in the Ethnic Groups/Scales Outline
1 Scales found	29 times	in the Ethnic Groups/Scales Outline
1 Scale found	28 times	in the Ethnic Groups/Scales Outline
1 Scale found	25 times	in the Ethnic Groups/Scales Outline
1 Scale found	17 times	in the Ethnic Groups/Scales Outline
1 Scales found	16 times	in the Ethnic Groups/Scales Outline
3 Scales found	12 times	in the Ethnic Groups/Scales Outline
2 Scales found	10 times	in the Ethnic Groups/Scales Outline
3 Scales found	9 times	in the Ethnic Groups/Scales Outline
1 Scale found	8 times	in the Ethnic Groups/Scales Outline
1 Scales found	7 times	in the Ethnic Groups/Scales Outline
2 Scales found	6 times	in the Ethnic Groups/Scales Outline
2 Scales found	5 times	in the Ethnic Groups/Scales Outline
4 Scales found	4 times	in the Ethnic Groups/Scales Outline
13 Scales found	3 times	in the Ethnic Groups/Scales Outline
31 Scales found	2 times	in the Ethnic Groups/Scales Outline
97 Scales found	1 time	in the Ethnic Groups/Scales Outline
31 Scales found	0 times	in the Ethnic Groups/Scales Outline

This makes a total of 198 Scales.

167 of these scales were found for a total of 551 times in the Ethnic Groups/Scales Outline.

End of Chart #45

SCALES IN NUMERICAL ORDER* WITH ETHNIC USES

CHART #46

7-TONE SCALES:

*#1 MAJOR	Algeria	Greece (modern)
	Appalachian Mts., So.	Hungary
	Arabic	India (Hindu)
	Basque	Ireland
	Britain	Italy
	China	Japan
	Czechoslovakia	Java
	Denmark	Jewish
	England	Mexico (modern)
	Ethiopia	Mongols
	France	Persia
	Galicia	Poland
	Germany	Russia
	Greece (Ancient)	Wales
#2 ANANDA	India (Hindu)	
#3 CHROMATIC MIXOLYDIAN	Greece (Ancient)	
#4 CHROMATIC DORIAN	Greece (Ancient)	India
#5 JEWISH (Comb. #32 & #62)	Jewish	
#6 NEAPOLITAN-MAJOR	---	
#7 POLISH (Comb. #15 & #31)	Poland	
#8 SUPER-LOCRIAN	Spanish	
#9 CHROM. HYPOPHRYGIAN	Greece (Ancient)	
#10 RAGA TODI	India (Hindu)	
#11 BYZANTINE	Byzantia	

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#12 LOCRIAN	Arabic	Persia
	Greece, Anct. (rare)	Portugal (asc., with
	Greece, Modern (rare)	#14 Phrygian des)
	Iceland (rare)	Scotland
	India (Hindu)	Sweden
	Japan	
#13 HIJAZI	Arabic	Greece
#14 NEAPOLITAN-MINOR ... ---		
#15 PHRYGIAN	African-American Slaves	Ireland
	Andalusia (Spain)	Japan
	Arabic	Jewish
	Bulgaria	Morocco
	Castile (Spain)	Naples (Italy)
	China	Netherlands
	Czechoslovakia	Persia
	France	Poland (rare)
	Galicia (Spain)	Portugal (des, #12 asc)
	Germany	Russia
	Greece, Ancient	Scotland
	Greece (not much)	Slovakia
	Hungary (rare)	Spain, general
	India (Hindu)	Turkey
	Italy	Yugoslavia
#16 JAVANESE	Arabic	Persia
	Java	Sicily
#17 MARAVA	India (Hindu)	
#18 BLUES	Black Americans (USA)	
#19 ENIGMATIC (Ascending) .. ---		
#20 CHROMATIC HYPOLYDIAN ...	Greece, Ancient	India(Hindu)
#21 INDIA	India	

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#22	HUNGARIAN-MAJOR	Hungary	Roumania
#23	CHROMATIC LYDIAN . . .	Greece, Ancient	
#24	ENIGMATIC, DESC.-INV. . ---		
#25	CHROMATIC PHRYGIAN . .	Greece, Ancient	
#26	PERSIAN	Persia	
#27	RAHAWI (Arabic)	Arabic	Persia
		Oriental (Near East)	
#28	ORIENTAL	Oriental (Near East)	
#29	PERSIA	Persia	
#30	DOUBLE HARMONIC	Arabic	Gypsy
		Armenia	Hungary
		Bulgaria (Old Ch. sing.)	India (Hindu)
		Byzantia	Jewish
		Greece, Ancient	Oriental(Near East)(many)
		Greece	Persia
#31	SPANISH	Arabic	Poland
		Greek, modern	Roumania
		Gypsy	Spain
		Jewish	Turkey
		Persia	
#32	ROUMANIAN-MAJOR . . .	Roumania	Turkey
#33	ARABIC	Arabic	Greece, modern
		Bulgaria (Old	
		Church singing)	
#34	MELODIC MINOR	Appalachian Mts,	Hungary
		Southern (USA)	India
		Arabic	Italy
		Germany	Persia
		Hawaii	Yugoslavia

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#35	AREZZO (comb. #1 & #34)	.. Arezzo (Italy)	
#36	BASQUE (comb.#50 & #62)	. Basque (Spain)	
#37	LYDIAN-DIMINISHED	... Greece, modern	Jewish
#38	CONWAY'S 7-TONE ---	
#39	TURKISH (comb.#44 & #50)	. Turkey	
#40	HUNGARIAN-MINOR	.... Algeria	Hungary
		Argentina	Jewish
		Greece, modern	Oriental
		Gypsy	(Near East; many)
		Hungarian-gypsy	Turkey
#41	CHROMATIC HYPODORIAN	Greece, Ancient	
#42	GREEK	..... Ethiopia (church)	Greece, modern
#43	GREEK	..... Greece (folk music)	
#44	ROUMANIAN-MINOR	.... Arabic	Roumania
		Greece, modern	Turkey
#45	HALF-DIMINISHED ---	
#46	ZANGULA (Arabic)	..... Arabic	Turkey
		Tunisia	
#47	HARMONIC MINOR	.... Arabic	Jewish
		Basque	Persia
		England	Poland
		Germany	Slovakia
		Hungary	Spain
		India (Hindu)	Sweden
#48	PTOLEMY'S MIXED HYPODORIAN	.. Ancient Greece	

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#49 NATURAL MINOR	African-American Slaves	Greece (one of main)
	Algeria	Hungary
	Appalachian Mts,So.(USA)	India (Hindu)
	Arabic	Ireland
	Basque	Italy
	Britain	Japan
	Bulgaria	Jewish
	China	Moravia
	Czechoslovakia	Morocco
	Denmark	Persia
	England	Peruvian Indians
	Estonia	Poland
	Ethiopia	Portugal
	Finland	Russia
	France	Scotland
	Gaelic	Sweden
	Galicia (Spain)	Turkey
	Greece, Ancient	Wales
#50 DORIAN	African-American Slaves	Hungary
	Algeria	India (Hindu)
	Appalachian Mts,So.(USA)	Italy
	Arabic	Ireland (8% of "folk")
	Armenia (with 9- 10-)	Japan
	(see #146)	Jewish
	Basque (comb.with #62)	Magyar
	(see #36)	Moravia
	British (most common "folk")	Netherlands
	Bulgaria	Poland
	China	Roumania
	Czechoslovakia	Russia
	Denmark	Scotland
	England (20% of "folk")	Scotch bagpipe tuning
	France	Slovakia
	Gaelic	Spain
	Galicia (Spain)	Sweden
	Germany	Turkey
	Greece, Ancient	Wales
	Greece (frequent)	

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#51 LYDIAN	African-American Slaves	India (Hindu)
	Appalachian Mts, So. (USA)	Ireland
	Arabic	Italy
	Austria	Japan
	Bulgaria	Java
	China	Netherlands
	Chou Dynasty (China)	Norway
	Czechoslovakia (often)	Persia
	Denmark	Poland (main)
	France	Portugal
	Greece, Ancient	Scotland
	Greece, modern (rare)	Slovakia (main)
	Iceland (most)	
#52 LYDIAN-AUGMENTED .. ---		
#53 LEADING WHOLE-TONE . ---		
#54 LYDIAN-MINOR	Roumania	
#55 OVERTONE	Roumania	
#56 IONIAN-AUGMENTED ... ---		
#57 LOCRIAN-MAJOR	Arabic	
#58 ZENKLA (Arabic)	Arabic	Persian
#59 RUMMEL-MEIA (Arabic) ..	Arabic	
#60 HARMONIC-MAJOR	Armenia	Norway
	Czechoslovakia	Russia
	Jewish	Turkey
#61 HINDUSTAN	Arabic	India (Hindu)
	Armenia	Persia
	Byzantia	

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#62 MIXOLYDIAN	..... African-American Slaves	..... Ireland (20% of "folk")
	Appalachian Mts, So. (USA)	Japan
	Arabic	Java
	Basque (see #36)	Jewish
	Great Britain, general	Mexico, modern
	China	Persia
	Czechoslovakia	Poland
	England (10% of "folk")	Portugal
	Flanders	Scotch Bagpipe tuning
	France	Scotland
	Galicia (Spain)	Slovakia
	Greece, Ancient	Spain, general
	Greece, modern	Sweden
	Hungary	Wales
	India (Hindu)	

#63 NEGRO SPIRITUAL

(comb. #1 & #62) African-American Slaves

6-TONE SCALES:

#64 APPALACHIAN

(comb. #92 & #--) Appalachian Mts., So. (USA)

#65 AFRICAN Black Africa

#66 BLUES Black Americans

#67 VILASAKHANI India (Hindu)

#68 LOCRIAN 6-TONE Scotland

#69 HIDSRAF (Arabic) Arabic Persia

#70 GURJARI India (Hindu)

#71 ABUSELIK (Arabic) Arabic Persia

#72 PHRYGIAN 6-TONE Scotland Ireland

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#73	IN SCALE (Japan)	Japan
#74	SAMANTA	India (Hindu)
#75	IRISH	Appalachian Mt, So. (USA) . . . Ireland Arabic Scotland
#76	AFRICAN	Black Africa
#77	DORIAN 6-TONE	Appalachian Mts, So (USA) . . . Scotland
#78	PANCHANA	India (Hindu)
#79	PROMETHEUS-NEAPOLITAN ---	
#80	AUGMENTED	---
#81	COMBINED-ALTERED . . .	India (Hindu)
#82	6-TONE SYMMETRICAL . . ---	
#83	BANGALA	India (Hindu) Portugal
#84	GREEK	Greece, modern
#85	POLISH	Poland
#86	IONIAN 6-TONE	Appalachian Mts, So. (USA) . . Scotland
#87	APPALACHIAN (USA) (combines #94 & #103)	Appalachian Mts, So. (USA)
#88	AKEBONO	Japan
#89	OVERTONE 6-TONE	Scotland
#90	AEOLIAN 6-TONE	AppalachianMts,So.(USA) . . . Scotland
#91	ARMENIAN	Ancient Armenian Church

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#92 GREEK	American Indians (No.)	Hungary
	England	Scotland
	Greece, modern	Slovakia
#93 GLINKA'S SCALE	Japan	Russia
#94 HUNGARIAN	Arabic	Hungary
#95 APPALACHIAN	Appalachian Mts, So.(USA) ...	Magyars
	Arabic	Scotland
	India (Hindu)	
#96 SCOTCH	African-American Slaves	Scotland
#97 WHOLE TONE	---	
#98 PROMETHEUS	---	
#99 LYDIAN 6-TONE	Appalachian Mts, So.(USA) ...	Scotland
	India (Hindu)	
#100 SCOTCH	Scotland	
#101 Appalachian		
(combines #96 & #100)	Appalachian Mts., So.(USA)	
#102 MIXOLYDIAN 6-TONE ...	Appalachian Mts, So.(USA) ...	Scotland
	Black Africa	
#103 GUIDO'S SCALE	African-American Slaves	India (Hindu)
	Arabic	Japan
	Australian Aborigines	Russian Church
	Finland	Scotland
8-TONE SCALES:		
#104 HINDU	India (Hindu)	
#105 LOCRIAN 8-TONE #1	India (Hindu)	

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#106	PHRYGIAN 8-TONE #1 . . .	India (Hindu)
#107	HINDU	India (Hindu)
#108	PORTUGUESE	Portugal
#109	DIMINISHED #2	---
#110	ESPLA'S SCALE	Spain, general
#111	SPANISH 8-TONE	Spain, general
#112	LATIN AMERICA	Latin America, general
#113	COMPOSITE #1	---
#114	LOCRIAN 8-TONE #2	Arabic Persia India (Hindu)
#115	ZIRAFKAND	Arabic Persia
#116	'IRAQ	Arabic
#117	PHRYGIAN 8-TONE #2 . . .	India (Hindu)
#118	BUZURG	Arabic Persia
#119	SCOTCH BAGPIPE TUNING	Scotch bagpipe tuning
#120	IRAK	Arabic Persia
#121	JOBIM'S	Brazil (So. America)
#122	AEOLIAN 8-TONE #1	India (Hindu)
#123	DORIAN 8-TONE #1	India (Hindu)
#124	CONWAY'S 8-TONE	---
#125	DIMINISHED #1	Arabic

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

#126	COMPOSITE #2	.....	---
#127	ARABIC	.....	Arabic
#128	AEOLIAN 8-TONE #2	.....	India (Hindu)
#129	ISFAHAN	.....	Arabic
#130	DORIAN 8-TONE #2	.....	India (Hindu)
#131	RYO 8-TONE	.....	Japan
#132	HINDU	.....	India (Hindu)
#133	HINDU	.....	India (Hindu)
#134	BOP SCALE	.....	---
#135	MAGON ABOT	.....	Jewish (for faith declarations)
#136	MIXOLYDIAN 8-TONE	... Arabic	India (Hindu)
9-TONE SCALES:			
#137	TCHEREPNIN'S	.....	---
#138	LOCRIAN 9-TONE	.....	India (Hindu)
#139	PHRYGIAN 9-TONE	.....	India (Hindu)
#140	HINDU	.....	India (Hindu)
#141	HINDU	.....	India (Hindu)
#142	AUXILIARY BLUES	.....	---
#143	BARTOK'S 9-TONE	.....	---
#144	AEOLIAN 9-TONE	.....	India (Hindu)

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

-
- *#145 DORIAN 9-TONE India (Hindu)
- #146 ARMENIAN Ancient Armenian Church
- #147 RYO 9-TONE India (Hindu) Japan
- #148 TUDOR England
- #149 ADONAI MALAKH (Jewish) . Greece, Ancient Jewish (for prayers)
India (Hindu)

10-TONE SCALES:

- #150 ALGERIAN Algeria
- #151 ARMENIAN Ancient Armenian Church
- #152 RUSSIAN Russian liturgical

5-TONE SCALES:

- #153 SEMITONAL PENT. #4 ... ---
- #154 JAPANESE Black Africa North American Indians
Japan
- #155 PELOG #1 Bali Japan
India (Hindu) Java
- #156 PELOG #4 Japan
- #157 HIRAJOSHI #2 Japan
- #158 PENTATONIC #5 Appalachian Mts, So. (USA) .. Java
China North American Indians
India (Hindu) Scotland
Japan
- #159 KUMOI #5 Japan
-

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#160	JAVANESE	.....	Java	
#161	SEMITONAL PENT. #1	...	India (Hindu)	
#162	HIRAJOSHI #4	.....	Greece, Ancient	..... Japan, Koto tuning
			Japan, general	
#163	KUMOI #2	.....	China	..... Japan
#164	PENTATONIC #2	.....	Appalachian Mts, So.(USA)	... Korea
			Bulgaria: Central	Magyars
			Southern	Mongolia
			China	North American Indians
			Egypt	Scotland
			Hungary	Thrace
			India (Hindu)	Transylvania
			Japan	Turkey
			Java	
#165	JAPANESE PENT. #4	.....	Japan	
#166	JAZZ MINOR PENTATONIC	---		
#167	KUMOI #3	.....	India (Hindu)	..... Japan
#168	JAPANESE PENT. #5	.....	Japan	
#169	DIMINISHED PENTATONIC	---		
#170	JAZZ DOMINANT PENT.	. ---		
#171	JAPANESE PENT. #3	.....	Japan	
#172	VIBHASA	.....	India (Hindu)	
#173	HIRAJOSHI #5	.....	Black Africa	..... Japan
			China	Java
#174	PENTATONIC-DOMINANT	---		

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

#175	REWA	.....	India (Hindu)	
#176	DOMINANT PENTATONIC	---		
#177	SCRIABIN	.....	---
#178	HIRAJOSHI #3	.....	Black Africa	Japan
			Greece, Ancient	
#179	PELOG #3	.....	Japan	
#180	PELOG #5	.....	Black Africa	Java
			Japan	
#181	SEMITONAL PENT. #3	...	Java	
#182	BULGARIAN	.....	Bulgaria, Southern	North American Indians
#183	PELOG #2	.....	Japan	Java
#184	HIRAJOSHI #1	.....	Egypt	Japan
#185	AFRICAN	.....	Black Africa	
#186	KUMOI #1	.....	Japan	Hawaii
			Korea	
#187	SEMITONAL PENT. #2	...	---	
#188	JAPANESE PENT. #2	.....	Japan	
#189	SEMITONAL PENT. #5	...	India (Hindu)	Japan
#190	KUMOI #4	.....	Australian Aborigines	Japan
#191	PENTATONIC #4	.....	American Indians (No.)	India (Hindu)
			AppalachianMts,So.USA	Japan
			Black Africa	Java
			China	Scotland
			Egypt	Slovakia

*Use Numbers to locate in The Grand Finale, starting on page 405

(cont'd)

Chart #46: Scales Numerically* with Ethnic Uses (cont'd)

*#192 PENTATONIC #1	American Indians, (No.)	India (Hindu)
	Appalachian Mts, So. (USA)	Japan
	Black Africa	Korea
	Bulgaria, Central	Poland
	Celts	Polynesia
	China	Scotland
#193 JAZZ PENTATONIC	---	
#194 INDIA	Czechoslovakia	India (Hindu)
#195 JAPANESE PENT. #1	Japan	
#196 AFRICAN	Black Africa	
#197 PENTATONIC #3	African-American Slaves	Japan
	American Indians, (No.)	Korea
	Appalachian Mts, So. (USA)	Mayas
	Black Africa	Mexican Indians (gen.)
	Borneo	Mongolia
	Bulgaria (Central)	Roumania
	China	Scotland
	India (Hindu)	Slovakia
#198 AFRICAN	Black Africa	

*Use Scale Numbers to locate scales in
The Grand Finale, starting on page 405

End of Chart #46

NOTE: A Summary of the Chart #46, above, is on the following page.

SUMMARY OF CHART #46

(from previous pages)

Showing Each Scale Number* with the Number of Times It Appears Ethnically
CHART #47

*#1...28	*#41... 1	*#81... 1	*#121... 1	*#161... 1
#2... 1	#42... 2	#82...--	#122... 1	#162... 3
#3... 1	#43... 1	#83... 2	#123... 1	#163... 2
#4... 2	#44... 4	#84... 1	#124...--	#164...17
#5... 1	#45...--	#85... 1	#125... 1	#165... 1
#6...--	#46... 3	#86... 2	#126...--	#166...--
#7... 1	#47...12	#87... 1	#127... 1	#167... 2
#8... 1	#48... 1	#88... 1	#128... 1	#168... 1
#9... 1	#49...36	#89... 1	#129... 1	#169...--
#10... 1	#50...37	#90... 2	#130... 1	#170...--
#11... 1	#51...25	#91... 1	#131... 1	#171... 1
#12...10	#52...--	#92... 6	#132... 1	#172... 1
#13... 2	#53...--	#93... 2	#133... 1	#173... 3
#14...--	#54... 1	#94... 2	#134...--	#174...--
#15...30	#55... 1	#95... 5	#135... 1	#175... 1
#16... 4	#56...--	#96... 2	#136... 2	#176...--
#17... 1	#57... 1	#97...--	#137...--	#177...--
#18... 1	#58... 2	#98...--	#138... 1	#178... 3
#19...--	#59... 1	#99... 3	#139... 1	#179... 1
#20... 2	#60... 6	#100... 1	#140... 1	#180... 3
#21... 1	#61... 5	#101... 1	#141... 1	#181... 1
#22... 2	#62...29	#102... 3	#142...--	#182... 2
#23... 1	#63... 1	#103... 8	#143...--	#183... 2
#24...--	#64... 1	#104... 1	#144... 1	#184... 2
#25... 1	#65... 1	#105... 1	#145... 1	#185... 1
#26... 1	#66... 1	#106... 1	#146... 1	#186... 3
#27... 3	#67... 1	#107... 1	#147... 2	#187...--
#28... 1	#68... 1	#108... 1	#148... 1	#188... 1
#29... 1	#69... 2	#109...--	#149... 3	#189... 2
#30...12	#70... 1	#110... 1	#150... 1	#190... 2
#31... 9	#71... 2	#111... 1	#151... 1	#191...10
#32... 2	#72... 2	#112... 1	#152... 1	#192...12
#33... 3	#73... 1	#113...--	#153...--	#193...--
#34... 9	#74... 1	#114... 3	#154... 3	#194... 2
#35... 1	#75... 4	#115... 2	#155... 4	#195... 1
#36... 1	#76... 1	#116... 1	#156... 1	#196... 1
#37... 2	#77... 2	#117... 1	#157... 1	#197...16
#38...--	#78... 1	#118... 2	#158... 7	#198... 1
#39... 1	#79...--	#119... 1	#159... 1	
#40... 9	#80...--	#120... 2	#160... 1	

End of Chart #47

*NOTE: Remember, you can use Scale Numbers to look up individual scales in The Grand Finale (which starts on page 405) for more information on that scale. The Grand Finale is the summation of all of the information in this book, scale by scale.

SECTION E

THE INTERESTING ODDITIES

OR

"....FORWARD, BACKWARD, INWARD, OUTWARD...."

CONTENTS OF SECTION E

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NOTE: If you are only interested in Backward Scales or in Modes, just read Chapter 19 or 20. They can each stand alone. However, if you might be interested in Backward *Modes*, you should read Chapters 19 - 21 *in order*. If you skip a step, you will be very confused; if you take them in order, you should have a good time! Personally, I don't recommend your skipping any of this.

CHAPTER 19

BACKWARD SCALES (RETROGRADE-INVERSIONS)

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REGARDING THE IMPORTANCE OF THE FOLLOWING 3 CHAPTERS

The different scales in music are much more related to each other than might at first be apparent. This chapter brings out some of these relationships more clearly. This section, Section E, will help to show that music itself is a very orderly, organized body.

But, one might wonder, why bother? Of what importance in this chapter and the two chapters after it? What significance does this all have?

Well, I'm not really sure that there is much of great importance in the following charts of themselves, other than gaining more knowledge and understanding. But, then, why does a person bother to work a jigsaw puzzle? Or why does one work a crossword puzzle or play solitaire? What significance do those have of themselves? What great importance?

These next three chapters might be said to contain musical jigsaw puzzles, musical crossword puzzles, musical solitaire. Just seeing the parts fit into place is exciting. And if you can't see much of significance in it, remember, things *can* be done just for the sheer pleasure of doing them. (What great importance is there to a game of bridge?)

Why bother? Well, you must recall the old story of the mountain climber who was asked why he climbed mountains. What was his answer? "Because they are there." The same spirit holds true for these following chapters. Also, remember, algebra started long ago as nothing more than a game! And -- of what importance is a baby? Who knows what he might grow up to be!

The orderliness of music, the orderliness of mathematics, the orderliness of the atom, all these help show the orderliness involved in the makeup of our universe. This orderliness gives, at least to me, the author, a glimpse of our knowing, caring, personal Creator -- and that *is* important.

NOTE: This is a repetition of the note at the beginning of this section, but it is important enough to repeat. If you are only interested in Backward Scales or in Modes, Chapter 19 or 20 can be read and understood easily by themselves. Otherwise, these next three chapters consist of three large steps and should be looked at *in order*. If you skip a step, you may be totally confused; if you take them in order, you will have something, in my opinion, of great interest and enjoyment. However, if you don't like puzzles or are easily confused by them and if you don't care about not understanding several of the parts in The Grand Finale, you may want to skip this entire section -- you'll still have all of the scales, just not some of the interrelationships between them. My own opinion is that you should just try to plow through this entire section -- I think it's *well* worth it.

AN EXPLANATION OF & AN EXAMPLE OF THE RETROGRADE-INVERSION OF SCALES

If the intervals of a scale are written down [Step 1, below], these intervals can then be written backward (in reversed order) [Step 2, below]. This backward, descending scale can then have its intervals played in an ascending order [Step 3, below]. This is called "retrograde-inversion". Often this retrograde-inversion (backward scale) will be found to form another "known" scale [Steps 4 to 6, below].

EXAMPLE:

1. Write down the intervals of a scale:

$$\begin{array}{cccccccc} \#1 \text{ Major} & = & C & - & D & - & E & - & F & - & G & - & A & - & B & - & c \\ & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow \\ & & 1 & - & 1 & - & \frac{1}{2} & - & 1 & - & 1 & - & 1 & - & \frac{1}{2} \end{array}$$

2. Write these intervals in reverse order:

$$1-1-\frac{1}{2}-1-1-1-\frac{1}{2} \text{ backwards is } \frac{1}{2}-1-1-1-\frac{1}{2}-1-1$$

3. Play the reversed intervals in an ascending manner:

$$\begin{array}{cccccccc} \frac{1}{2} & - & 1 & - & 1 & - & 1 & - & \frac{1}{2} & - & 1 & - & 1 \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow & & \downarrow \\ C & - & D\flat & - & E\flat & - & F & - & G & - & A\flat & - & B\flat - c \end{array}$$

4. Break these intervals into tetrachords (see Method 2, page 35):

$$\underbrace{\frac{1}{2}-1-1}_{\text{tetrachord}} - 1 - \underbrace{\frac{1}{2}-1-1}_{\text{tetrachord}}$$

5. Look up the tetrachords in the Tetrachord Table, page 24.

$$\frac{1}{2}-1-1 = mN$$

6. Now write down the FORMULA. Since both tetrachords are " $\frac{1}{2}-1-1$ ", the Formula is:

$$mN - 1 - mN$$

7. Look up this Formula in Chart #15, page 113. This will show that the scale with the Formula "mN -1- mN" is Scale #15 Phrygian.

8. Therefore, it has just been seen that the Major Scale and the Phrygian Scale are mirror images of each other!

These eight steps were followed for 179 of the 198 scales in this book. The other 10 scales were either combinations of two scales (Combination Scales, see page 124) or they involved more than an octave. Some very interesting things came to light when the scales were put into Retrograde-Inversions:

1. Of the 46 5-Tone Scales, 27 of them (59%) formed another "known" scale.
2. Of the 37 6-Tone Scales, 19 of them (51%) formed another "known" scale.
3. Of the 57 7-Tone Scales, 44 of them (77%) formed another "known" scale.
4. Of the 30 8-Tone Scales, 18 of them (60%) formed another "known" scale.
5. Of the 10 9-Tone Scales, 6 of them (60%) formed another "known" scale.

TOTAL: Of 180 put backward, 114 of them (63%) formed another "known" scale!

Conclusion: 63% (almost 2/3) of this book's scales that aren't either more than an octave or a Combination Scale, if put into a retrograde inversion, will form either another different scale or form itself again. (There, aren't you glad you decided to read this chapter after all?!)

This interesting fact will be carried out several more steps in the following pages. Various charts showing various relationships will be given. Again, I repeat: Chapters 19, 20, and 21 are "steps", and the "steps" are in order and should be looked at *in order* if you really are interested in getting a good understanding of what is going on in this part of the book. If you aren't interested, this entire section can be skipped without loss of anything more than an in-depth understanding of the different fascinating (really!) relationships that scales have to each other. I feel that you would be missing *much* real enjoyment, but, again, that is just my own personal feeling. For myself, I found all of this actually exhilarating. And I think if you decide to go ahead with this section, you will be glad you did.

NOTE: Remember that all of the scales have Scale Numbers which can be used to obtain more information about a particular scale by looking that scale up by its Scale number in The Grand Finale, starting on page 405.

RETROGRADE-INVERSION OF 5-TONE SCALES

CHART #48

#	NAME	BACKWARDS	#	NAME
*#153	Semitonal Pentatonic #4 =	*#167	Kumoi #3	
154	Japanese =	**	---	
155	Pelog #1 =	178	Hirajoshi #3	
156	Pelog #4 =	173	Hirajoshi #5	
157	Hirajoshi #2 =	183	Pelog #2	
158	Pentatonic #5 =	197	Pentatonic #3	
159	Kumoi #5 =	187	Semitonal Pentatonic #2	
160	Javanese =	**	---	
161	Semitonal Pentatonic #1 =	186	Kumoi #1	
162	Hirajoshi #4 =	180	Pelog #5	
163	Kumoi #2 =	189	Semitonal Pentatonic #5	
164	Pentatonic #2 =	192	Pentatonic #1	
165	Japanese Pentatonic #4 =	---		
166	Jazz minor Pentatonic =	166	SAME (Jazz minor Pentatonic)	
167	Kumoi #3 =	153	Semitonal Pentatonic #4	
168	Japanese Pentatonic #5 =			
169	Diminished Pentatonic =	**	---	
170	Jazz Dominant Pentatonic =	**	---	
171	Japanese Pentatonic #3 =	---		
172	Vibhasa =	**	---	
173	Hirajoshi #5 =	156	Pelog #4	
174	Pentatonic-Dominant =	**	---	
175	Rewa =	---		
176	Dominant Pentatonic =	---		
177	Scriabin =	**	---	
178	Hirajoshi #3 =	155	Pelog #1	
179	Pelog #3 =	184	Hirajoshi #1	
180	Pelog #5 =	162	Hirajoshi #4	
181	Semitonal Pentatonic #3 =	190	Kumoi #4	

*Use Scale Number to find scale in The Grand Finale,
starting page 629 for 5-Tone Scales

(cont'd)

**Part of a 5-Tone Modal Series (see Chapter 20, page 259)

Chart #48: 5-Tone Scales "Backwards" (cont'd)

#	Name	Backwards	#	Name
*#182	Bulgarian	=	**	---
183	Pelog #2	=	*#157	Hirajoshi #2
184	Hirajoshi #1	=	179	Pelog #3
185	African	=	**	---
186	Kumoi #1	=	161	Semitonal Pentatonic #1
187	Semitonal Pentatonic #2	=	159	Kumoi #5
188	Japanese Pentatonic #2	=	---	
189	Semitonal Pentatonic #5	=	163	Kumoi #2
190	Kumoi #4	=	181	Semitonal Pentatonic #3
191	Pentatonic #4	=	191	SAME (Pentatonic #4)
192	Pentatonic #1	=	164	Pentatonic #2
193	Jazz Pentatonic	=	---	
194	India	=	**	---
195	Japanese Pentatonic #1	=	---	
196	African	=	**	---
197	Pentatonic #3	=	158	Pentatonic #5
198	African	=	**	---

*Use Number to look up scale in The Grand Finale, starting page 629

End of Chart #48

**Part of a 5-Tone Modal Series (see Chapter 20, page 259)

RETROGRADE-INVERSION OF 6-TONE SCALES

CHART #49

#	NAME	BACKWARDS	#	NAME
*#64	Appalachian (Combination Scale)		*#86	Ionian 6-Tone
	Combines: #-- =		95	Appalachian
	#92 Greek =		76	African
65	African =		**	---
66	Blues =		78	Panchana
67	Vilasakhani =		**	---
68	Locrian 6-Tone =			---
69	Hidshaf =			---
70	Gurjari =		**	---
71	Abuselik =		96	Scotch
72	Phrygian 6-Tone =		**	---
73	In Scale =		**	---
74	Samanta =		103	Guido's Scale
75	Irish =		65	African
76	African =		94	Hungarian
77	Dorian 6-Tone =		67	Vilasakhani
78	Panchana =		**	---
79	Prometheus-Neapolitan =		82	6-Tone Symmetrical
80	Augmented =			---
81	Combined-Altered =		80	Augmented
82	6-Tone Symmetrical =			---
83	Bangala =		91	Armenian, Anct. Church
84	Greek =		93	Glinka's Scale
85	Polish =		=	--- (half of Combin. Scale #64)
86	Ionian 6-Tone =		77	Dorian 6-Tone
87	Appalachian (Combination Scale)		75	Irish
	Combines: #94 Hungarian . . . =		**	---
	#103 Guido's =			---
88	Akebono =		100	Scotch
89	Overtone 6-Tone =		=	84Greek
90	Aeolian 6-Tone =			
91	Armenian, Anct. Church			

*Use Scale Number to find scale in The Grand Finale, starting page 491

(cont'd)

**Part of a 6-Tone Modal Series (see Chapter 20, page 259)

Chart #49: 6-Tone Scales "Backwards" (cont'd)

#	Name	Backwards	#	Name
*#92	Greek	=	*#95	Appalachian
93	Glinka's Scale	=	85	Polish
94	Hungarian	=	77	Dorian 6-Tone
95	Appalachian	=	92	Greek
96	Scotch	=	72	Phrygian 6-Tone
97	Whole Tone	=	97	SAME (Whole Tone)
98	Prometheus	=	**	---
99	Lydian 6-Tone	=	**	---
100	Scotch	=	90	Aeolian 6-Tone
101	Appalachian (Combination Scale)			
	Combines: #96 Scotch	=	**	---
	#100 Scotch	=	90	Aeolian 6-Tone
102	Mixolydian 6-Tone	=	**	---
103	Guido's Scale	=	75	Irish

*Use Number to look up scale in The Grand Finale,
starting on page 491 for 6-Tone Scales

End of Chart #49

**Part of a 6-Tone Modal Series, see Chapter 20, page 259

***This is a "missing scale", see page 317

RETROGRADE-INVERSION OF 7-TONE SCALES

CHART #50

#	NAME	BACKWARDS	#	NAME
*#1	Major	=	*#15	Phrygian
2	Ananda	=	14	Neapolitan-minor
3	Chromatic Mixolydian, Asc.	=	**	---
4	Chromatic Dorian, Asc.	=	**	---
5	Jewish (Combination Scale)			
	Combines: #62 Mixolydian	=	49	Natural minor
	#32 Roum.-Major	=	48	Ptolemy's Mixed Hypodorian
6	Neapolitan-Major	=	6	SAME (Neapolitan-Major)
7	Polish (Combination Scale)			
	Combines: #31 Spanish	=	60	Harmonic-Major
	#15 Phrygian	=	1	Major
8	Super-Locrian	=	52	Lydian-Augmented
9	Chromatic Hypophrygian, Asc.	=	**	---
10	Raga Todi	=	23	Chromatic Lydian, Asc.
11	Byzantine	=	56	Ionian-Augmented
12	Locrian	=	51	Lydian
13	Hijazi	=	37	Lydian-Diminished
14	Neapolitan-minor	=	2	Ananda
15	Phrygian	=	1	Major
16	Javanese	=	34	Melodic minor
17	Marava	=	**	---
18	Blues	=		---
19	Enigmatic	=		---
20	Chromatic Hypolydian, Asc.	=	26	Persian
21	India	=	**, ***	---
22	Hungarian-Major	=	**	---
23	Chromatic Lydian, Asc.	=	10	Raga Todi
24	Enigmatic, Des.-Inv.	=		---
25	Chromatic Phrygian, Asc.	=	**	---
26	Persian	=	20	Chromatic Hypolydian, Asc.
27	Rahawi	=	**	---
28	Oriental	=	40	Hungarian-minor
29	Persian	=	41	Chromatic Hypodorian, Asc.
30	Double Harmonic	=	30	SAME (Double Harmonic)
31	Spanish	=	60	Harmonic-Major
32	Roumanian-Major	=	48	Ptolemy's Mixed Hypodorian

*Use Scale Number to find scale in The Grand Finale, starting page 405

(cont'd)

**Part of a 7-Tone Modal Series, see Chapter 20, page 259

***This is a "missing scale", see page 307

Chart #50: 7-Tone Scales "Backwards" (cont'd)

#	Name	Backwards	#	Name
*#33	Arabic	=	*#47	Harmonic-minor
34	Melodic minor	=	16	Javanese
35	Arezzo (Combination Scale)		16	Javanese
	Combines: #34 Melodic min.	=	15	Phrygian
	#1 Major	=		
36	Basque (Combination Scale)		49	Natural minor
	Combines: #62 Mixolydian	=	50	SAME (Dorian)
	#50 Dorian	=	=	13Hijazi
37	Lydian-Diminished	=	---	
38	Conway's 7-Tone Scale	=		
39	Turkish (Combination Scale)		50	SAME (Dorian)
	Combines: #50 Dorian	=	46	Zangula
	#44 Roum.-minor	=	28	Oriental
40	Hungarian-minor	=	29	Persian
41	Chromatic Hypodorian, Asc.	=	58	Zenkla
42	Greek	=	59	Rummel-Meia
43	Greek	=	46	Zangula
44	Roumanian-minor	=	55	Overtone
45	Half-Diminished	=	44	Roumanian-minor
46	Zangula	=	33	Arabic
47	Harmonic minor	=	32	Roumanian-Major
48	Ptolemy's Mixed Hypodorian	=	62	Mixolydian
49	Natural minor	=	50	SAME (Dorian)
50	Dorian	=	12	Locrian
51	Lydian	=	8	Super-Locrian
52	Lydian-Augmented	=	**	---
53	Leading Whole Tone	=	57	Locrian-Major
54	Lydian-minor	=	45	Half-Diminished
55	Overtone	=	11	Byzantine
56	Ionian-Augmented	=	54	Lydian minor
57	Locrian-Major	=	42	Greek
58	Zenkla	=	43	Greek
59	Rummel-Meia	=	31	Spanish
60	Harmonic-Major	=	61	SAME (Hindustan)
61	Hindustan	=	49	Natural minor
62	Mixolydian	=		
63	Negro Spiritual (Combin. Scale)			
	Combines: #1 Major	=	15	Phrygian
	#62 Mixolydian	=	49	Natural minor

*Use Number to look up scale in The Grand Finale, starting page 405

End of Chart #50

**Part of a 7-Tone Modal Series, see Chapter 20, page 259

RETROGRADE-INVERSION OF 8-TONE SCALES

CHART #51

#	NAME	BACKWARDS	#	NAME
*#104	Hindu	=	**	---
105	Locrian 8-Tone #1	=	**	---
106	Phrygian 8-Tone #1	=	*#136	Mixolydian 8-Tone
107	Hindu	=	116	'Iraq
108	Portuguese	=	***	---
109	Diminished #2	=	125	Diminished #1
110	Espla's Scale	=	132	Hindu
111	Spanish 8-Tone	=	134	Bop Scale
112	Latin American	=	127	Arabic
113	Composite #1	=	**	---
114	Locrian 8-Tone #2	=	131	Ryo 8-Tone
115	Zirafkand	=	**	---
116	'Iraq	=	107	Hindu
117	Phrygian 8-Tone #2	=	**	---
118	Buzurg	=	---	---
119	Scotch Bagpipe Tuning	=	***	---
120	Irak	=	**	---
121	Jobim's	=	126	Composite #2
122	Aeolian 8-Tone #1	=	**	---
123	Dorian 8-Tone #1	=	128	Aeolian 8-Tone #2
124	Conway's 8-Tone (Comb. Scale)	=	---	---
125	Diminished #1	=	109	Diminished #2
126	Composite #2	=	121	Jobim's
127	Arabic	=	112	Latin American
128	Aeolian 8-Tone #2	=	123	Dorian 8-Tone #1
129	Isfahan	=	**	---
130	Dorian 8-Tone #2	=	**	---
131	Ryo 8-Tone	=	114	Locrian 8-Tone #2
132	Hindu	=	110	Espla's Scale
133	Hindu	=	**	---
134	Bop Scale	=	111	Spanish 8-Tone
135	Magon Abot	=	***	---
136	Mixolydian 8-Tone	=	106	Phrygian 8-Tone #1

*Use Number to find scale in The Grand Finale, starting page 545 End of Chart #51

**Part of a 8-Tone Modal Series, see Chapter 20, page 259

***More than an octave, see page 127

RETROGRADE-INVERSION OF 9-TONE SCALES

CHART #52

#	NAME	BACKWARDS	#	NAME
*#137	Tcherepnin	=	*#137	SAME (Tcherepnin)
138	Locrian 9-Tone	=	147	Ryo 9-Tone
139	Phrygian 9-Tone	=	145	Dorian 9-Tone
140	Hindu	=	**	---
141	Hindu	=	**	---
142	Auxiliary Blues	=	**	---
143	Bartok's 9-Tone	=	**	---
144	Aeolian 9-Tone	=	144	SAME (Aeolian 9-Tone)
145	Dorian 9-Tone	=	139	Phrygian 9-Tone
146	Armenian	=	***	---
147	Ryo 9-Tone	=	138	Locrian 9-Tone
148	Tudor Scale	=	***	---
149	Adonai Malakh	=	***	---

*Use Number to find scale in The Grand Finale, starting page 599 End of Chart #52

**Part of a 9-Tone Modal Series, see Chapter 20, page 259

***More than an octave, see page 127

SUMMARY OF RETROGRADE-INVERSION CHARTS #48 - #52 (ABOVE)
CHART #53

7-TONE SCLS:	#43 = #59	#84 = #91	#125 = #109	#162 = #180
#1 = #15	44 = 46	85 = 93	126 = 121	163 = 189
2 = 14	45 = 55	86 = --	127 = 112	164 = 192
3 = *	46 = 44	87 = **	128 = 123	165 = --
4 = *	47 = 33	88 = *	129 = *	166 = 166
5 = **	48 = 32	89 = --	130 = *	167 = 153
6 = 6	49 = 62	90 = 100	131 = 114	168 = --
7 = **	50 = 50	91 = 84	132 = 110	169 = *
8 = 52	51 = 12	92 = 95	133 = *	170 = *
9 = *	52 = 8	93 = 85	134 = 111	171 = --
10 = 23	53 = *	94 = 77	135 = +	172 = *
11 = 56	54 = 57	95 = 92	136 = 106	173 = 156
12 = 51	55 = 45	96 = 72		174 = *
13 = 37	56 = 11	97 = 97	9-TONE SCLS:	175 = --
14 = 2	57 = 54	98 = ++	137 = 137	176 = --
15 = 1	58 = 42	99 = *	138 = 147	177 = *
16 = 34	59 = 43	100 = 90	139 = 145	178 = 155
17 = *	60 = 31	101 = **	140 = *	179 = 184
18 = --	61 = 61	102 = *	141 = *	180 = 162
19 = --	62 = 49	103 = 75	142 = *	181 = 190
20 = 26	63 = **		143 = *	182 = *
21 = *		8-TONE SCLS:	144 = 144	183 = 157
22 = *,++	6-TONE SCLS:	104 = *	145 = 139	184 = 179
23 = 10	64 = **	105 = *	146 = +	185 = *
24 = --	65 = 76	106 = 136	147 = 138	186 = 161
25 = *	66 = --	107 = 116	148 = +	187 = 159
26 = 20	67 = 78	108 = +	149 = +	188 = --
27 = *	68 = *	109 = 125		189 = 163
28 = 40	69 = --	110 = 132	10-TONE SCLS:	190 = 181
29 = 41	70 = --	111 = 134	150 = +	191 = 191
30 = 30	71 = *	112 = 127	151 = +	192 = 164
31 = 60	72 = 96	113 = *	152 = +	193 = --
32 = 48	73 = *	114 = 131		194 = *
33 = 47	74 = *	115 = *	5-TONE SCLS:	195 = --
34 = 16	75 = 103	116 = 107	153 = 167	196 = *
35 = **	76 = 65	117 = *	154 = *	197 = 158
36 = **	77 = 94	118 = --	155 = 178	198 = *
37 = 13	78 = 67	119 = +	156 = 173	
38 = --	79 = *	120 = *	157 = 183	
39 = **	80 = 82	121 = 126	158 = 197	
40 = 28	81 = --	122 = *	159 = 187	
41 = 29	82 = 80	123 = 128	160 = *	
42 = 58	83 = --	124 = **	161 = 186	

*Part of a Modal Series, see Chapter 20, page 259

End of Chart #53

**Combination Scale, see page 124

+More than an octave, see page 125

++One of my "missing scales", see page 317

CHAPTER 20

MODES (MODAL SERIES)

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AN EXPLANATION OF MODES (MODAL SERIES) & MODAL SERIES NUMBERING

In the last chapter I told you that, unless your only interest was in modes, the first three chapters of this section should be looked at in order, since they are actually three steps. We talked in the last chapter about "backward" (or retrograded) scales. In this chapter we will talk about scales in Modes, and in the next chapter we will discuss "backward" modes.

Many people are familiar with the Diatonic (Ecclesiastical) Modes (See Section F for the chapters on the Diatonic Modes). But some musicians don't realize that there are other scales besides the Diatonic Modes that can be put into Modes. In reality, any scale can be "put into" a Mode, but what quite a few people may not realize is that many scales that are actually *used* may be in the same mode with another scale that is used. Let's look at it.

First of all, for those who are not familiar with putting scales into modes, let's begin by showing an example of what we are talking about. It can be done either by notes or by intervals. We'll use for our example the familiar Pentatonic Scales:

Scale #192,	Pentatonic #1	=	C-D-F-G-A-c	or	1-1½-1-1-1½
Scale #164,	Pentatonic #2	=	D-F-G-A-C-d		1½-1-1-1½-1
Scale #197,	Pentatonic #3	=	F-G-A-C-D-f		1-1-1½-1-1½
Scale #191,	Pentatonic #4	=	G-A-C-D-F-g		1-1½-1-1½-1
Scale #158,	Pentatonic #5	=	A-C-D-F-G-a		1½-1-1½-1-1

This is a Modal Series (my label, as far as I know, but it serves the purpose.) This is the fifth Modal Series of 5-Tone Scales in this book. Therefore, I have labeled it MS 5-V. A Modal Series of 5-Tone Scales, the fifth (Vth) Group.

Using the intervals is the more accurate way of working with the Modal Series. All of the scales except the Combination Scales and scales over an octave have been put into a Modal Series in this chapter. In some of them, the Modal Series is filled up or partially filled up with scales, but with others I could find no other scale to fit in the Modal Series. (See Chapter 2: Criticism #22 and its Counter.) As this was done, some very interesting things came to light:

Out of 46 5-Tone Scales, 40 fitted in a Modal Series with at least 1 more known scale.
 Out of 36 6-Tone Scales, 27 fitted in a Modal Series with at least 1 more known scale.
 Out of 57 7-Tone Scales, 50 fitted in a Modal Series with at least 1 more known scale.
 Out of 29 8-Tone Scales, 26 fitted in a Modal Series with at least 1 more known scale.
 Out of 10 9-Tone Scales, 8 fitted in a Modal Series with at least 1 more known scale.

In other words, there are in this book 178 scales that are not Combination Scales nor over an octave and not counting the Whole Tone Scale (#97) (which, of course, would be 1-1-1-1-1 in all steps of its Modal Series). Of these 178 scales, 151 of them (85%) are in a Modal Series with at least one other known scale. There are 38 Modal Series in the following pages with *more* than one scale in them. This averages 3.97 scales for each of these 38 Modal Series.

How did I first come across all of this? Well, one day I was thinking about the Diatonic Modes, and I began wondering if any of "my" other scales were related to each other as the Diatonic Modes were related. So I took a scale and began experimenting thusly:

1. Let's take the 7-Tone Scale #16 Javanese (Major 2- 3- 7-). If put in the key of C it would be:

$$\begin{array}{cccccccc}
 C & - & D\flat & - & E\flat & - & F & - & G & - & A & - & B\flat & - & c & = & \text{its notes} \\
 \Downarrow & & \Downarrow & & \Downarrow & & \Downarrow & & \Downarrow & & \Downarrow & & \Downarrow & & \Downarrow & & \\
 \frac{1}{2} & - & 1 & - & 1 & - & 1 & - & 1 & - & \frac{1}{2} & - & 1 & = & \text{its intervals}
 \end{array}$$

2. Now cycle these intervals:

$$\begin{array}{l}
 \frac{1}{2}-1-1-1-1-\frac{1}{2}-1 \\
 1-1-1-1-\frac{1}{2}-1-\frac{1}{2} \\
 1-1-1-\frac{1}{2}-1-\frac{1}{2}-1 \\
 1-1-\frac{1}{2}-1-\frac{1}{2}-1-1 \\
 1-\frac{1}{2}-1-\frac{1}{2}-1-1-1 \\
 \frac{1}{2}-1-\frac{1}{2}-1-1-1-1 \\
 1-\frac{1}{2}-1-1-1-1-\frac{1}{2}
 \end{array}$$

3. I find groups of intervals difficult to look at and keep straight, so next let's break these groups of intervals into tetrachords (3 intervals) and label them (see pages 23-24):

$$\begin{array}{ccc}
 \underbrace{\frac{1}{2}-1-1}_{mN} & -1- & \underbrace{1-\frac{1}{2}-1}_m \\
 & & = \text{a Formula of } mN -1- m \text{ for the 1st group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{1-1-1}_W & -1- & \underbrace{\frac{1}{2}-1-\frac{1}{2}}_{Dim} \\
 & & = \text{a Formula of } W -1- Dim \text{ for the 2nd group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{1-1-1}_W & -\frac{1}{2}- & \underbrace{1-\frac{1}{2}-1}_m \\
 & & = \text{a Formula of } W -\frac{1}{2}- m \text{ for the 3rd group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{1-1-\frac{1}{2}}_M & -1- & \underbrace{\frac{1}{2}-1-1}_{mN} \\
 & & = \text{a Formula of } M -1- mN \text{ for the 4th group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{1-\frac{1}{2}-1}_m & -\frac{1}{2}- & \underbrace{1-1-1}_W \\
 & & = \text{a Formula of } m -\frac{1}{2}- W \text{ for the 5th group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{\frac{1}{2}-1-\frac{1}{2}}_{Dim} & -1- & \underbrace{1-1-1}_W \\
 & & = \text{a Formula of } Dim -1- W \text{ for the 6th group}
 \end{array}$$

$$\begin{array}{ccc}
 \underbrace{1-\frac{1}{2}-1}_m & -1- & \underbrace{1-1-\frac{1}{2}}_M \\
 & & = \text{a Formula of } m -1- M \text{ for the 7th group}
 \end{array}$$

4. Now, using Chart #15, "Scales by 1st Tetrachord (Formula)", starting on page 113, let's look up the Formulas and see if they fit any of the scales in this book. There we find:

The 1st Formula belongs to	Scale #16,	Javanese (our original)
The 2nd Formula belongs to	Scale #52,	Lydian-Augmented
The 3rd Formula belongs to	Scale #55,	Overtone
The 4th Formula belongs to	Scale #61,	Hindustan
The 5th Formula belongs to	Scale #45,	Half-Diminished
The 6th Formula belongs to	Scale #8,	Super-Locrian
The 7th Formula belongs to	Scale #34,	Melodic minor

This, then is a 7-Tone Scale Modal Series. I have numbered this particular Modal Series "MS 7-II". MS = Modal Series; these are 7-Tone Scales; and this is the second (II) group of 7-Tone Modal Series. All of the other Modal Series are numbered in a similar fashion. First MS (Modal Series), then the number of tones in the scales in the Modal Series (5, 6, 7, 8, or 9 tones), then the Roman numerals showing which Modal Series it is for that particular tone-group.

I add one more thing in order to show a particular scale in the Modal Series. In the 7-Tone Modal Series above, if I wanted to designate the scale "#61 Hindustan", which is the 4th formula in the series above, I would write "MS 7-II:4". The Overtone Scale (#55) which has the 3rd formula above would be written "MS 7-II:3". The Super-Locrian (#8) which has the 6th formula in the series above is "MS 7-II:6". That's all there is to my system. A summary of this system is on the next page.

The charts on the following pages are divided up into Tone Groups. All 5-Tone Scales (and, therefore, 5-Tone Modal Series) are in one chart, all 6-Tone in another, etc. All intervals of all Modal Series are shown so you can "plug in" any new scales you may find and also to give you an idea of other scales to try.

A SUMMARY OF MODAL SERIES NUMBERING (MS:SPT#)

1. Modal Series (MS) are numbered by Tone Groups (5-, 6-, 7-, 8-, or 9-Tone Scales) as MS 5-, MS 6-, MS 7-, MS 8-, or MS 9-.
2. Next, Modal Series (MS) are numbered *within* the particular Tone Group (5-Tone, 6-Tone, etc.) -- the first (I) Modal Series of 5-Tone or 6-Tone Scales, etc.; the second (II), the fifth (V), etc. group. So it would be MS 5-I, MS 6-III, etc.
3. Lastly, within a particular Modal Series (MS 5-III, MS 7-VIII, etc.), the scale within the Modal Series is numbered by the step that scale has within the Modal Series, the first (1), the second (2), etc. In the example on page 263, Scale #45 Half-Diminished would have the Modal Series Scale Point Tone Number (MSSPT# or MS:SPT#) of MS 7-II:5.

NOTE: The Modal Series are also shown in Section C among the charts on separate tone groups. I felt that they belonged in both places.

NOTE: Remember, the Scale Numbers (#) refer to my numbering system, which can be used to look up a scale in THE GRAND FINALE, starting on page 405, for lots of information on that particular scale.

5-TONE SCALES IN MODAL SERIES

CHART #54

MODAL SERIES #	*#	NAME	INTERVALS
MS 5-I:	1	186 Kumoi #1	1- $\frac{1}{2}$ -2-1-1 $\frac{1}{2}$
	2	163 Kumoi #2	$\frac{1}{2}$ -2-1-1 $\frac{1}{2}$ -1
	3	167 Kumoi #3	2-1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	190 Kumoi #4	1-1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -2
	5	159 Kumoi #5	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -2-1
MS 5-II:	1	161 Semitonal Pentatonic #1	1 $\frac{1}{2}$ -1-2- $\frac{1}{2}$ -1
	2	187 Semitonal Pentatonic #2	1-2- $\frac{1}{2}$ -1-1 $\frac{1}{2}$
	3	181 Semitonal Pentatonic #3	2- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1
	4	153 Semitonal Pentatonic #4	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-2
	5	189 Semitonal Pentatonic #5	1-1 $\frac{1}{2}$ -1-2- $\frac{1}{2}$
MS 5-III:	1	184 Hirajoshi #1	1- $\frac{1}{2}$ -2- $\frac{1}{2}$ -2
	2	157 Hirajoshi #2	$\frac{1}{2}$ -2- $\frac{1}{2}$ -2-1
	3	178 Hirajoshi #3	2- $\frac{1}{2}$ -2-1- $\frac{1}{2}$
	4	162 Hirajoshi #4	$\frac{1}{2}$ -2-1- $\frac{1}{2}$ -2
	5	173 Hirajoshi #5	2-1- $\frac{1}{2}$ -2- $\frac{1}{2}$
MS 5-IV:	1	155 Pelog #1	$\frac{1}{2}$ -1-2- $\frac{1}{2}$ -2
	2	183 Pelog #2	1-2- $\frac{1}{2}$ -2- $\frac{1}{2}$
	3	179 Pelog #3	2- $\frac{1}{2}$ -2- $\frac{1}{2}$ -1
	4	156 Pelog #4	$\frac{1}{2}$ -2- $\frac{1}{2}$ -1-2
	5	180 Pelog #5	2- $\frac{1}{2}$ -1-2- $\frac{1}{2}$
MS 5-V:	1	192 Pentatonic #1	1-1 $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$
	2	164 Pentatonic #2	1 $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -1
	3	197 Pentatonic #3	1-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$
	4	191 Pentatonic #4	1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1
	5	158 Pentatonic #5	1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1
MS 5-VI:	1	195 Japanese Pentatonic #1	1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -2
	2	188 Japanese Pentatonic #2	1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -2-1
	3	171 Japanese Pentatonic #3	1 $\frac{1}{2}$ - $\frac{1}{2}$ -2-1-1
	4	165 Japanese Pentatonic #4	$\frac{1}{2}$ -2-1-1-1 $\frac{1}{2}$
	5	168 Japanese Pentatonic #5	2-1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$
MS 5-VII:	1	154 Japanese	1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1-1
	2	166 Jazz minor Pentatonic	1 $\frac{1}{2}$ -1-1-1-1 $\frac{1}{2}$
	3	**	1-1-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	196 African	1-1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
	5		1-1 $\frac{1}{2}$ -1 $\frac{1}{2}$ -1-1
MS 5-VIII:	1	182 Bulgarian	2- $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$
	2	160 Javanese	$\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -2
	3	194 India	1-1-1 $\frac{1}{2}$ -2- $\frac{1}{2}$
	4	**	1-1 $\frac{1}{2}$ -2- $\frac{1}{2}$ -1
	5	**	1 $\frac{1}{2}$ -2- $\frac{1}{2}$ -1-1

*Use to locate in Grand Finale, starting page 629 for 5-Tone Scales

(cont'd)

**These intervals are backwards of a known scale's, see Chapter 19

Chart #54: 5-Tone Modal Series (cont'd)

Modal Series #	*#	Name	Intervals
MS 5-IX:	1 185	African	$1-\frac{1}{2}-2-1\frac{1}{2}-1$
	2 **	.....	$\frac{1}{2}-2-1\frac{1}{2}-1-1$
	3 **	.....	$2-1\frac{1}{2}-1-1-\frac{1}{2}$
	4 **	.....	$1\frac{1}{2}-1-1-\frac{1}{2}-2$
	5 198	African	$1-1-\frac{1}{2}-2-1\frac{1}{2}$
MS 5-X:	1 177	Scriabin	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	2 **	.....	$1\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5 174	Pentatonic-Dominant	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1$
MS 5-XI:	1 172	Vibhasa	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}$
	2	.....	$1\frac{1}{2}-1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	3	.....	$1-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	5	.....	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
MS 5-XII:	1 170	Jazz Dominant Pentatonic	$\frac{1}{2}-1\frac{1}{2}-1-2-1$
	2	.....	$1\frac{1}{2}-1-2-1-\frac{1}{2}$
	3	.....	$1-2-1-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$2-1-\frac{1}{2}-1\frac{1}{2}-1$
	5	.....	$1-\frac{1}{2}-1\frac{1}{2}-1-2$
MS 5-XIII:	1 169	Diminished Pentatonic	$1\frac{1}{2}-\frac{1}{2}-1-2-1$
	2	.....	$\frac{1}{2}-1-2-1-1\frac{1}{2}$
	3	.....	$1-2-1-1\frac{1}{2}-\frac{1}{2}$
	4	.....	$2-1-1\frac{1}{2}-\frac{1}{2}-1$
	5	.....	$1-1\frac{1}{2}-\frac{1}{2}-1-2$
MS 5-XIV:	1 175	Rewa	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-2$
	2	.....	$1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$\frac{1}{2}-2-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5	.....	$2-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 5-XV:	1 176	Dominant Pentatonic.....	$\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1$
	2	.....	$1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	3	.....	$1\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
	5	.....	$1-\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}-1\frac{1}{2}$
MS 5-XVI:	1 193	Jazz Pentatonic	$1-1-1-2-1$
	2	.....	$1-1-2-1-1$
	3	.....	$1-2-1-1-1$
	4	.....	$2-1-1-1-1$
	5	.....	$1-1-1-1-2$

End of Chart #26

*Use to locate in Grand Finale, starting page 629

**These intervals are backwards of a known scale's, see Chapter 19

NOTE: Remember, for more about Modal Series, see Chapter 20 (page 259)

6-TONE SCALES IN MODAL SERIES

CHART #55

MODAL SERIES #	#	NAME	INTERVALS
MS 6-I:	1	90 Aeolian 6-Tone	$1-\frac{1}{2}-1-1\frac{1}{2}-1-1$
	2	68 Locrian 6-Tone	$\frac{1}{2}-1-1\frac{1}{2}-1-1-1$
	3	86 Ionian 6-Tone	$1-1\frac{1}{2}-1-1-1-\frac{1}{2}$
	4	77 Dorian 6-Tone	$1\frac{1}{2}-1-1-1-\frac{1}{2}-1$
	5	99 Lydian 6-Tone	$1-1-1-\frac{1}{2}-1-1\frac{1}{2}$
	6	102 Mixolydian 6-Tone	$1-1-\frac{1}{2}-1-1\frac{1}{2}-1$
MS 6-II:	1	*	$1-1\frac{1}{2}-1-\frac{1}{2}-1-1$
	2	*	$1\frac{1}{2}-1-\frac{1}{2}-1-1-1$
	3	94 Hungarian	$1-\frac{1}{2}-1-1-1-1\frac{1}{2}$
	4	*	$\frac{1}{2}-1-1-1-1\frac{1}{2}-1$
	5	*	$1-1-1-1\frac{1}{2}-1-\frac{1}{2}$
	6	100 Scotch	$1-1-1\frac{1}{2}-1-\frac{1}{2}-1$
MS 6-III:	1	103 Guido's	$1-1-\frac{1}{2}-1-1-1\frac{1}{2}$
	2	92 Greek	$1-\frac{1}{2}-1-1-1\frac{1}{2}-1$
	3	72 Phrygian 6-Tone	$\frac{1}{2}-1-1-1\frac{1}{2}-1-1$
	4	96 Scotch	$1-1-1\frac{1}{2}-1-1-\frac{1}{2}$
	5	95 Appalachian	$1-1\frac{1}{2}-1-1-\frac{1}{2}-1$
	6	75 Irish	$1\frac{1}{2}-1-1-\frac{1}{2}-1-1$
MS 6-IV:	1	93 Glinka's	$1-\frac{1}{2}-1-1-\frac{1}{2}-2$
	2	*	$\frac{1}{2}-1-1-\frac{1}{2}-2-1$
	3	*	$1-1-\frac{1}{2}-2-1-\frac{1}{2}$
	4	88 Akebono	$1-\frac{1}{2}-2-1-\frac{1}{2}-1$
	5	73 In Scale	$\frac{1}{2}-2-1-\frac{1}{2}-1-1$
	6	*	$2-1-\frac{1}{2}-1-1-\frac{1}{2}$
MS 6-V:	1	*	$\frac{1}{2}-1-1-\frac{1}{2}-1-2$
	2	*	$1-1-\frac{1}{2}-1-2-\frac{1}{2}$
	3	*	$1-\frac{1}{2}-1-2-\frac{1}{2}-1$
	4	*	$\frac{1}{2}-1-2-\frac{1}{2}-1-1$
	5	*	$1-2-\frac{1}{2}-1-1-\frac{1}{2}$
	6	85 Polish	$2-\frac{1}{2}-1-1-\frac{1}{2}-1$
MS 6-VI:	1	*	$1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}$
	2	84 Greek	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1$
	3	*	$1\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}$
	4	*	$\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	5	91 Armenian, Anct. Church	$1-1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	6	*	$1\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
MS 6-VII:	1	82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	2	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	3	82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5	82 6-Tone Symmetrical	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6	80 Augmented	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$

*These intervals are backwards of a known scale's, see page 307

(cont'd)

Chart #55: 6-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 6-VIII:	1	79 Prometheus-Neapolitan	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1$
	2		$\dots\dots\dots 1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	3		$\dots\dots\dots 1-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4		$\dots\dots\dots 1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1$
	5		$\dots\dots\dots \frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	6	*	$\dots\dots\dots 1-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
MS 6-IX:	1	71 Abuselik	$\frac{1}{2}-2-\frac{1}{2}-1-1-1$
	2		$\dots\dots\dots 2-\frac{1}{2}-1-1-1-\frac{1}{2}$
	3	74 Samanta	$\frac{1}{2}-1-1-1-\frac{1}{2}-2$
	4	*	$\dots\dots\dots 1-1-1-\frac{1}{2}-2-\frac{1}{2}$
	5	*	$\dots\dots\dots 1-1-\frac{1}{2}-2-\frac{1}{2}-1$
	6		$\dots\dots\dots 1-\frac{1}{2}-2-\frac{1}{2}-1-1$
MS 6-X:	1	98 Prometheus	$1-1-1-1\frac{1}{2}-\frac{1}{2}-1$
	2		$\dots\dots\dots 1-1-1\frac{1}{2}-\frac{1}{2}-1-1$
	3		$\dots\dots\dots 1-1\frac{1}{2}-\frac{1}{2}-1-1-1$
	4		$\dots\dots\dots 1\frac{1}{2}-\frac{1}{2}-1-1-1-1$
	5	76 African	$\frac{1}{2}-1-1-1-1-1\frac{1}{2}$
	6		$\dots\dots\dots 1-1-1-1-1\frac{1}{2}-\frac{1}{2}$
MS 6-XI:	1	65 African	$1\frac{1}{2}-1-1-1-1-\frac{1}{2}$
	2		$\dots\dots\dots 1-1-1-1-\frac{1}{2}-1\frac{1}{2}$
	3		$\dots\dots\dots 1-1-1-\frac{1}{2}-1\frac{1}{2}-1$
	4		$\dots\dots\dots 1-1-\frac{1}{2}-1\frac{1}{2}-1-1$
	5	*	$\dots\dots\dots 1-\frac{1}{2}-1\frac{1}{2}-1-1-1$
	6		$\dots\dots\dots \frac{1}{2}-1\frac{1}{2}-1-1-1-1$
MS 6-XII:	1	67 Vilasakhani	$\frac{1}{2}-1-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	2		$\dots\dots\dots 1-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3		$\dots\dots\dots 1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	4	*	$\dots\dots\dots 1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}$
	5		$\dots\dots\dots 1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1$
	6		$\dots\dots\dots \frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1-1\frac{1}{2}$
MS 6-XIII:	1	66 Blues	$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	2		$\dots\dots\dots 1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	3		$\dots\dots\dots \frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1$
	4	78 Panchana	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}$
	5		$\dots\dots\dots 1\frac{1}{2}-1-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	6		$\dots\dots\dots 1-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
MS 6-XIV:	1	97 Whole Tone	$1-1-1-1-1-1$
	2	97 Whole Tone	$\dots\dots\dots 1-1-1-1-1-1$
	3	97 Whole Tone	$\dots\dots\dots 1-1-1-1-1-1$
	4	97 Whole Tone	$\dots\dots\dots 1-1-1-1-1-1$
	5	97 Whole Tone	$\dots\dots\dots 1-1-1-1-1-1$
	6	97 Whole Tone	$\dots\dots\dots 1-1-1-1-1-1$

* These intervals are backwards of a known scale's, see page 307

(cont'd)

Chart #55: 6-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 6-XV:	1	69	Hidshaf $\frac{1}{2}$ -1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1
	2		..... 1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	3		..... $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	4		..... $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $1\frac{1}{2}$
	5		..... $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $1\frac{1}{2}$ - $1\frac{1}{2}$
	6		..... 1- $\frac{1}{2}$ -1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
MS 6-XVI:	1	81	Combined-Altered $\frac{1}{2}$ - $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -2
	2		..... $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -2- $\frac{1}{2}$
	3		..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$
	4		..... $\frac{1}{2}$ - $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$ -1
	5		..... $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$ -1- $\frac{1}{2}$
	6		..... 2- $\frac{1}{2}$ - $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
MS 6-XVII:	1	70	Gurjari $\frac{1}{2}$ -1-1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
	2		..... 1-1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	3		..... 1- $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	4		..... $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	5		..... $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $1\frac{1}{2}$
	6		..... $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $1\frac{1}{2}$ - $1\frac{1}{2}$
MS 6-XVIII:	1	83	Bangala $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -2
	2		..... $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -2- $\frac{1}{2}$ 157
	3		..... $\frac{1}{2}$ -1- $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$
	4		..... 1- $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
	5		..... $\frac{1}{2}$ -2- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1
	6		..... 2- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 6-XIX:	1	89	Overtone 6-Tone 1-2- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2		..... 2- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	3		..... $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-2
	4		..... 1- $\frac{1}{2}$ -1-1-2- $\frac{1}{2}$
	5		..... $\frac{1}{2}$ -1-1-2- $\frac{1}{2}$ -1
	6		..... 1-1-2- $\frac{1}{2}$ -1- $\frac{1}{2}$

End of Chart #55

REMEMBER: The Scale Numbers can be used to look up the individual scales in The Grand Finale for more information. This starts on page 491 for 6-Tone Scales.

7-TONE SCALES IN MODAL SERIES

CHART #56

MODAL SERIES	#	#	NAME	INTERVALS
MS 7-I:	1	49	Natural minor (Aeolian)	$1-\frac{1}{2}-1-1-\frac{1}{2}-1-1$
	2	12	Locrian	$\frac{1}{2}-1-1-\frac{1}{2}-1-1-1$
	3	1	Major (Ionian)	$1-1-\frac{1}{2}-1-1-1-\frac{1}{2}$
	4	50	Dorian	$1-\frac{1}{2}-1-1-1-\frac{1}{2}-1$
	5	15	Phrygian	$\frac{1}{2}-1-1-1-\frac{1}{2}-1-1$
	6	51	Lydian	$1-1-1-\frac{1}{2}-1-1-\frac{1}{2}$
	7	62	Mixolydian	$1-1-\frac{1}{2}-1-1-\frac{1}{2}-1$
MS 7-II:	1	16	Javanese	$\frac{1}{2}-1-1-1-1-\frac{1}{2}-1$
	2	52	Lydian-Augmented	$1-1-1-1-\frac{1}{2}-1-\frac{1}{2}$
	3	55	Overtone	$1-1-1-\frac{1}{2}-1-\frac{1}{2}-1$
	4	61	Hindustan	$1-1-\frac{1}{2}-1-\frac{1}{2}-1-1$
	5	45	Half-Diminished	$1-\frac{1}{2}-1-\frac{1}{2}-1-1-1$
	6	8	Super-Locrian	$\frac{1}{2}-1-\frac{1}{2}-1-1-1-1$
	7	34	Melodic minor	$1-\frac{1}{2}-1-1-1-1-\frac{1}{2}$
MS 7-III:	1	57	Locrian-Major	$1-1-\frac{1}{2}-\frac{1}{2}-1-1-1$
	2			$1-\frac{1}{2}-\frac{1}{2}-1-1-1-1$
	3	*		$\frac{1}{2}-\frac{1}{2}-1-1-1-1-1$
	4	6	Neapolitan-Major	$\frac{1}{2}-1-1-1-1-1-\frac{1}{2}$
	5	53	Leading Whole Tone	$1-1-1-1-1-1-\frac{1}{2}$
	6			$1-1-1-1-\frac{1}{2}-\frac{1}{2}-1$
	7	54	Lydian-minor	$1-1-1-\frac{1}{2}-\frac{1}{2}-1-1$
MS 7-IV:	1	28	Oriental	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$
	2			$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}$
	3			$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}$
	4	30	Double Harmonic	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5			$1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	6			$\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	7	40	Hungarian-minor	$1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
MS 7-V:	1	25	Chromatic Phrygian, Asc.	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	2	4	Chromatic Dorian, Asc.	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	3	20	Chromatic Hypolydian, Asc.	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	4	9	Chromatic Hypophrygian, Asc.	$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	5	41	Chromatic Hypodorian, Asc.	$1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6	3	Chromatic Mixolydian, Asc.	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	7	23	Chromatic Lydian, Asc.	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
MS 7-VI:	1	10	Raga Todi	$\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	2	*		$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3	29	Persian	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	4	*		$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}$
	5	26	Persian	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	6	*		$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	7			$\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$

*These intervals are backwards of a known scale's, see page 307

(cont'd)

NOTE: Use Scale Numbers to look up individual scales in The Grand Finale, page 405

Chart #56: 7-Tone Modal Series (cont'd)

Modal Series	#	#	Name	Intervals
MS 7-VII:	1	13	Hijazi	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
	2	56	Ionian-Augmented	1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	44	Roumanian-minor	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	4	31	Spanish	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	5	h	**.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	6		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	7	47	Harmonic minor	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
MS 7-VIII:	1	33	Arabic	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	2		.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	3		.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	60	Harmonic Major	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	46	Zangula	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
	6	11	Byzantine	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	7	37	Lydian-Diminished	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
MS 7-IX:	1	42	Greek	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	2	27	Rahawi	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	3		.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	4		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	5	14	Neapolitan-minor	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	6		.....	1-1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	59	Rummel-Meia	1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 7-X:	1	43	Greek	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	2		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	3	2	Ananda	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	4		.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	5		.....	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 $\frac{1}{2}$
	6	*	.....	1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	7	58	Zenkla	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 7-XI:	1	21	India	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2		.....	1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	*	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$
	4		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
	5		.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$
	6	**c	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	7		.....	1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 7-XII:	1	22	Hungarian-Major	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$
	3	**k	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$
	4		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
	5		.....	1- $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	6	**d	.....	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	7		.....	1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$

*These intervals are backwards of a known scale's, see page 307

(cont'd)

**This is one of my "missing" scales, see page 317

Chart #56: 7-Tone Modal Series (cont'd)

Modal Series #	#	Name	Intervals
MS 7-XIII:	1 32	Roumanian-Major	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1$
	2	.....	$\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1-1\frac{1}{2}$
	3 *	.....	$\frac{1}{2}-1-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	4	.....	$1-1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	5	.....	$1-\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$
	6 **b	.....	$\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1$
	7	.....	$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}$
MS 7-XIV:	1 48	Ptolemy's	$1-\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	2	.....	$\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	3	.....	$1-1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
	4	.....	$1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1$
	5	.....	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-1$
	6 17	Marava	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}$
	7	.....	$1\frac{1}{2}-1-\frac{1}{2}-1-1-\frac{1}{2}-\frac{1}{2}$
MS 7-XV:	1 18	Blues	$1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	2	.....	$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}$
	3	.....	$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}$
	4	.....	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	5	.....	$\frac{1}{2}-1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	6	.....	$1\frac{1}{2}-1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	7	.....	$1-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
MS 7-XVI:	1 19	Enigmatic (Verdi)	$\frac{1}{2}-1\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}$
	2	.....	$1\frac{1}{2}-1-1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3	.....	$1-1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	5	.....	$1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1$
	6	.....	$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1-1$
	7	.....	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-1-1-\frac{1}{2}$
MS 7-XVII:	1 24	Enigmatic, Des-Inv	$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	2	.....	$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$
	3	.....	$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	4	.....	$1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
	5	.....	$1-\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
	6	.....	$\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1$
	7	.....	$\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}$
MS 7-XVIII:	1 38	Conway's 7-Tone	$1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}$
	2	.....	$\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1$
	3	.....	$1-\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}$
	4	.....	$\frac{1}{2}-\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}-1$
	5	.....	$\frac{1}{2}-2-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}$
	6	.....	$2-\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}$
	7	.....	$\frac{1}{2}-1-\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2$

*These intervals are backwards of a known scale's, see page 307

End of Chart #56

**This is one of my "missing" scales, see page 317

8-TONE SCALES IN MODAL SERIES

CHART #57

MODAL SERIES	#	#	NAME	INTERVALS
MS 8-I:	1	131	Ryo 8-Tone	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2	123	Dorian 8-Tone #1	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	3	106	Phrygian 8-Tone #1	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1
	4	107	Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	5	116	'Iraq	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	136	Mixolydian 8-Tone	1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	128	Aeolian 8-Tone #2	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	114	Locrian 8-Tone #2	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
MS 8-II:	1	129	Isfahan	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	2		.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	3	134	Bop Scale	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	4		.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	111	Spanish 8-Tone	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	6		.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	7	*	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	8		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 8-III:	1	133	Hindu	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2	122	Aeolian 8-Tone #1	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	3	105	Locrian 8-Tone #1	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1
	4	104	Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	5		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	130	Dorian 8-Tone #2	1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	117	Phrygian 8-Tone #2	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	132	Hindu	1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 8-IV:	1	110	Espla's	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1
	2	*	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
	3	*	.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1
	4		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	5	*	.....	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	6	*	.....	1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	*	.....	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	*	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
MS 8-V:	1	125	Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	109	Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	3	125	Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4	109	Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	125	Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	6	109	Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	7	125	Diminished #1	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	109	Diminished #2	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1

*These intervals are backwards of a known scale's, see page 307

(cont'd)

Chart #57: 8-Tone Modal Series (cont'd)

Modal Series	#	Name	Intervals
MS 8-VI:	1 115	Zirafkand	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3 126	Composite #2	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	4 113	Composite #1	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	5	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	6 112	Latin American	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
MS 8-VII:	1 127	Arabic	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	3 *	.....	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4 121	Jobim's	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	5	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	6 *	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	7	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 8-VIII:	1 120	Irak	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	2	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	4 *	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
MS 8-IX:	1 118	Buzurg	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2	.....	1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	3	.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
	4	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
	5	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6	.....	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7	.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	8	.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1

*These intervals are backwards of a known scale's, see page 307

End of Chart #57

NOTE: Remember, the individual scales can be looked up by their Scale Numbers in The Grand Finale, which starts on page 545 for 8-Tone Scales.

9-TONE SCALES IN MODAL SERIES

CHART #58

MODAL SERIES	#	#	NAME	INTERVALS
MS 9-I:	1	139	Phrygian 9-Tone	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	2	141	Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	3	*	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	4	147	Ryo 9-Tone	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	5	144	Aeolian 9-Tone	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	6	138	Locrian 9-Tone	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
	7	140	Hindu	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	8	*	.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	9	145	Dorian 9-Tone	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
MS 9-II:	1	137	Tcherepnin's	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	2		.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	3		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	4	137	Tcherepnin's	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	5		.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	6		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
	7	137	Tcherepnin's	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
	8		.....	1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	9		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 9-III:	1	142	Auxiliary Blues	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1
	2		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1
	3		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	4		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$
	5		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7		.....	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	8	*	.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	9		.....	1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
MS 9-IV:	1	143	Bartok's	1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
	2		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1
	3		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
	4		.....	$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
	5		.....	$\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	6		.....	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	7		.....	1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
	8	*	.....	1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
	9		.....	$\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1

*These intervals are backwards of a known scale's, see page 307

End of Chart #58

NOTE: The Scale Numbers can be used to look up individual scales in The Grand Finale, which starts on page 599 for 9-Tone Scales.

On the following pages are summaries of Charts #54 to #58. Summaries are, to me, very important in getting the "big picture". There are two summaries, each from a different viewpoint. The first one, Chart #59, summarizes the above charts, Charts #54 - #58, the Modal Series themselves. The next chart, #60, just lists all of the scales numerically, #1 through #198, giving the Modal Series Scale Point Tone Number (MSSPT#) after each Scale Number. This will be self-explanatory when you look at the chart.

Remember, that the Scale Numbers (#1 - #198) can be used to look up each individual scale in The Grand Finale (starting on page 405). There is found, under each scale, all of the information that this book has about that particular scale.

A SUMMARY OF MODAL SERIES CHARTS #54 - #58

CHART #59

5-TONE MODAL SERIES:

MS 5-I:1- #186 2- 163 3- 167 4- 190 5- 159	MS 5-II:1- #161 2- 187 3- 181 4- 153 5- 189	MS 5-III:1- #184 2- 157 3- 178 4- 162 5- 173	MS 5-IV:1- #155 2- 183 3- 179 4- 156 5- 180
MS 5-V:1- #192 2- 164 3- 197 4- 191 5- 158	MS 5-VI:1- #195 2- 188 3- 171 4- 165 5- 168	MS 5-VII:1- #154 2- 166 *3- --- 4- 196 5- ---	MS 5-VIII:1- #182 2- 160 3- 194 *4- --- 5- ---
MS 5-IX:1- #185 *2- --- 3- --- *4- --- 5- 198	MS 5-X:1- #177 2- --- 3- --- 4- --- 5- 174	MS 5-XI:1- #172 2- --- 3- --- 4- --- 5- ---	MS 5-XII:1- #170 2- --- - *3- --- 4- --- 5- ---
MS 5-XIII:1- #169 2- --- *3- --- 4- --- 5- ---	MS 5-XIV:1- #175 2- --- 3- --- 4- --- 5- ---	MS 5-XV:1- #176 2- --- 3- --- 4- --- 5- ---	MS 5-XVI:1- #193 2- --- 3- --- 4- --- 5- ---

6-TONE MODAL SERIES:

MS 6-I:1- #90 2- 68 3- 86 4- 77 5- 99 6- 102	MS 6-II:*1- #--- *2- --- 3- 94 4- --- *5- --- 6- 100	MS 6-III:1- #103 2- 92 3- 72 4- 96 5- 95 6- 75	MS 6-IV:1- #93 *2- -- *3- -- 4- 88 5- 73 6- --
MS 6-V:1- #-- 2- -- 3- -- 4- -- 5- -- 6- 85	MS 6-VI:1- #-- 2- 84 3- -- 4- -- 5- 91 6- --	MS 6-VII:1- #82 2- 80 3- 82 4- 80 5- 82 6- 80	MS 6-VIII:1- #79 2- -- 3- -- 4- -- 5- -- *6- --
MS 6-IX:1- #71 2- -- 3- 74 *4- -- *5- -- 6- --	MS 6-X:1- #98 2- -- 3- -- 4- -- 5- 76 6- --	MS 6-XI:1- #65 2- -- 3- -- 4- -- *5- -- 6- --	MS 6-XII:1- #67 2- -- 3- -- 4- -- 5- -- 6- --

*These intervals are backwards of a known scale, see page 307

(cont'd)

Chart #59: Summary of Modal Series Charts #54 - #58 (cont'd)

MS 6-XIII:1- #66	MS 6-XIV:1- #97	MS 6-XV:1- #69	MS 6-XVI:1- #81
2- --	2- 97	2- --	2- --
3- --	3- 97	3- --	3- --
4- 78	4- 97	4- --	4- --
5- --	5- 97	5- --	5- --
6- --	6- 97	6- --	6- --

MS 6-XVII:1- #70	MS 6-XVIII:1- #83	MS 6-XIX:1- #89
2- --	2- --	2- --
3- --	3- --	3- --
4- --	4- --	4- --
5- --	5- --	5- --
6- --	6- --	6- --

7-TONE MODAL SERIES:

MS 7-I:1- #49	MS 7-II:1- #16	MS 7-III:1- #57	MS 7-IV:1- #28
2- 12	2- 52	2- --	2- --
3- 1	3- 55	*3- --	3- --
4- 50	4- 61	4- 6	4- 30
5- 15	5- 45	5- 53	5- --
6- 51	6- 8	6- --	6- --
7- 62	7- 34	7- 54	7- 40

MS 7-V:1- #25	MS 7-VI:1- #10	MS 7-VII:1- #13	MS 7-VIII:1- #33
2- 4	*2- --	2- 56	2- --
3- 20	3- 29	3- 44	3- --
4- 9	*4- --	4- 31	4- 60
5- 41	5- 26	**5- --	5- 46
6- 3	*6- --	6- --	6- 11
7- 23	7- --	7- 47	7- 37

MS 7-IX:1- #42	MS 7-X:1- #43	MS 7-XI:1- #21	MS 7-XII:1- #22
2- 27	2- --	2- --	2- --
3- --	3- 2	*3- --	*,**3- --
4- --	4- --	4- --	4- --
5- 14	5- --	5- --	5- --
6- --	*6- --	**6- --	**6- --
7- 59	7- 58	7- --	7- --

MS 7-XIII:1- #32	MS 7-XIV:1- #48	MS 7-XV:1- #18	MS 7-XVI:1- #19
2- --	2- --	2- --	2- --
*3- --	3- --	3- --	3- --
4- --	4- --	4- --	4- --
5- --	5- --	5- --	5- --
**6- --	6- 17	6- --	6- --
7- --	7- --	7- --	7- --

MS 7-XVII:1- #24	MS 7-XVIII:1- #38
2- --	2- --
3- --	3- --
4- --	4- --
5- --	5- --
6- --	6- --
7- --	7- --

*These intervals are backward of a known scale, see page 307
 **These intervals belong to one of my "Missing Scales", see page 317

(cont'd)

Chart #59: Summary of Modal Series Charts #54 - #58 (cont'd)

8-TONE MODAL SERIES:

MS 8-I:1- #131	MS 8-II:1- #129	MS 8-III:1- #133	MS 8-IV:1- #110
2- 123	2- ---	2- 122	*2- ---
3- 106	3- 134	3- 105	*3- ---
4- 107	4- ---	4- 104	4- ---
5- 116	5- 111	5- ---	*5- ---
6- 136	6- ---	6- 130	*6- ---
7- 128	*7- ---	7- 117	*7- ---
8- 114	8- ---	8- 132	*8- ---
MS 8-V:1- #125	MS 8-VI:1- #115	MS 8-VII:1- #127	MS 8-VIII:1- #120
2- 109	2- ---	2- ---	2- ---
3- 125	3- 126	*3- ---	3- ---
4- 109	4- 113	4- 121	*4- ---
5- 125	5- ---	5- ---	5- ---
6- 109	6- 112	*6- ---	6- ---
7- 125	7- ---	7- ---	7- ---
8- 109	8- ---	8- ---	8- ---
MS 8-IX:1- #118			
2- ---			
3- ---			
4- ---			
5- ---			
6- ---			
7- ---			
8- ---			

9-TONE MODEL SERIES:

MS 9-I:1- #139	MS 9-II:1- #137	MS 9-III:1- #142	MS 9-IV:1- #143
2- 141	2- ---	2- ---	2- ---
*3- ---	3- ---	3- ---	3- ---
4- 147	4- 137	4- ---	4- ---
5- 144	5- ---	5- ---	5- ---
6- 138	6- ---	6- ---	6- ---
7- 140	7- 137	7- ---	7- ---
*8- ---	8- ---	*8- ---	*8- ---
9- 145	9- ---	9- ---	9- ---

*These intervals are backward of a known scale, see page 307

End of Chart #59

NOTE: The Scale Numbers may be used to look up individual scales in The Grand Finale (which start on page 405) to get more information about each scale.

**SCALES NUMERICALLY WITH
MODAL SERIES SCALE POINT TONE NUMBER (MS:SPT#)**

CHART #60

7-TONE SCALES:

- #1 MS 7-I:3
- 2 MS 7-X:3
- 3 MS 7-V:6
- 4 MS 7-V:2
- 5 Comb. Sc1.
- 6 MS 7-III:4
- 7 Comb. Sc1.
- 8 MS 7-II:6
- 9 MS 7-V:4
- 10 MS 7-VI:1
- 11 MS 7-VIII:6
- 12 MS 7-I:2
- 13 MS 7-VII:1
- 14 MS 7-IX:5
- 15 MS 7-I:5
- 16 MS 7-II:1
- 17 MS 7-XIV:6
- 18 MS 7-XV:1
- 19 MS 7-XVI:1
- 20 MS 7-V:3
- 21 MS 7-XI:1
- 22 MS 7-XII:1
- 23 MS 7-V:7
- 24 MS 7-XVII:1
- 25 MS 7-V:1
- 26 MS 7-VI:5
- 27 MS 7-IX:2
- 28 MS 7-IV:1
- 29 MS 7-VI:3
- 30 MS 7-IV:4
- 31 MS 7-VII:4
- 32 MS 7-XIII:1
- 33 MS 7-VIII:1
- 34 MS 7-II:7
- 35 Comb. Sc1.
- 36 Comb. Sc1.
- 37 MS 7-VIII:7
- 38 MS 7-XVIII:1
- 39 Comb. Sc1.
- 40 MS 7-IV:7
- 41 MS 7-V:5
- 42 MS 7-IX:1
- 43 MS 7-X:1

- #44 MS 7-VII:3
- 45 MS 7-II:5
- 46 MS 7-VIII:5
- 47 MS 7-VII:7
- 48 MS 7-XIV:1
- 49 MS 7-I:1
- 50 MS 7-I:4
- 51 MS 7-I:6
- 52 MS 7-II:2
- 53 MS 7-III:5
- 54 MS 7-III:7
- 55 MS 7-II:3
- 56 MS 7-VII:2
- 57 MS 7-III:1
- 58 MS 7-X:7
- 59 MS 7-IX:7
- 60 MS 7-VIII:4
- 61 MS 7-II:4
- 62 MS 7-I:7
- 63 Comb. Sc1.

6-TONE SCALES:

- #64 Comb. Sc1.
- 65 MS 6-XI:1
- 66 MS 6-XIII:1
- 67 MS 6-XII:1
- 68 MS 6-I:2
- 69 MS 6-XV:1
- 70 MS 6-XVII:1
- 71 MS 6-IX:1
- 72 MS 6-III:3
- 73 MS 6-IV:5
- 74 MS 6-IX:3
- 75 MS 6-III:6
- 76 MS 6-X:5
- 77 MS 6-I:4
- 78 MS 6-XIII:4
- 79 MS 6-VIII:1
- 80 MS 6-VII:2,4,6
- 81 MS 6-XVI:1
- 82 MS 6-VII:1,3,5
- 83 MS 6-XVIII:1
- 84 MS 6-VI:2
- 85 MS 6-V:6

- #86 MS 6-I:3
- 87 Comb. Sc1.
- 88 MS 6-IV:4
- 89 MS 6-XIX:1
- 90 MS 6-I:1
- 91 MS 6-VI:5
- 92 MS 6-III:2
- 93 MS 6-IV:1
- 94 MS 6-II:3
- 95 MS 6-III:5
- 96 MS 6-III:4
- 97 MS 6-XIV (all)
- 98 MS 6-X:1
- 99 MS 6-I:5
- 100 MS 6-II:6
- 101 Comb. Sc1.
- 102 MS 6-I:6
- 103 MS III:1

8-TONE SCALES:

- #104 MS 8-III:4
- 105 MS 8-III:3
- 106 MS 8-I:3
- 107 MS 8-I:4
- 108 Octave +
- 109 MS 8-V:2,4,6,8
- 110 MS 8-IV:1
- 111 MS 8-II:5
- 112 MS 8-VI:6
- 113 MS 8-VI:4
- 114 MS 8-I:8
- 115 MS 8-VI:1
- 116 MS 8-I:5
- 117 MS 8-III:7
- 118 MS 8-IX:1
- 119 Octave +
- 120 MS 8-VIII:1
- 121 MS 8-VII:4
- 122 MS 8-III:2
- 123 MS 8-I:2
- 124 Comb. Sc1.
- 125 MS 8-V:1,3,5,7
- 126 MS 8-VI:3

(cont'd)

Chart #60: Scales Numerically with MSSPT# (cont'd)

#127	MS 8-VII:1	10-TONE SCALES:	#174	MS 5-X:5	
128	MS 8-I:7		175	MS 5-XIV:1	
129	MS 8-II:1	#150	Octave +	176	MS 5-XV:1
130	MS 8-III:6	151	Octave +	177	MS 5-X:1
131	MS 8-I:1	152	Octave +	178	MS 5-III:3
132	MS 8-III:8			179	MS 5-IV:3
133	MS 8-III:1			180	MS 5-IV:5
134	MS 8-II:3	5-TONE SCALES:	181	MS 5-II:3	
135	Octave +		182	MS 5-VIII:1	
136	MS 8-I:6	#153	MS 5-II:4	183	MS 5-IV:2
		154	MS 5-VII:1	184	MS 5-III:1
		155	MS 5-IV:1	185	MS 5-IX:1
		156	MS 5-IV:4	186	MS 5-I:1
		157	MS 5-III:2	187	MS 5-II:2
		158	MS 5-V:5	188	MS 5-VI:2
		159	MS 5-I:5	189	MS 5-II:5
		160	MS 5-VIII:2	190	MS 5-I:4
		161	MS 5-II:1	191	MS 5-V:4
		162	MS 5-III:4	192	MS 5-V:1
		163	MS 5-I:2	193	MS 5-XVI:1
		164	MS 5-V:2	194	MS 5-VIII:3
		165	MS 5-VI:4	195	MS 5-VI:1
		166	MS 5-VII:2	196	MS 5-VII:4
		167	MS 5-I:3	197	MS 5-V:3
		168	MS 5-VI:5	198	MS 5-IX:5
		169	MS 5-XIII:1		
		170	MS 5-XII:1		
		171	MS 5-VI:3		
		172	MS 5-XI:1		
		173	MS 5-III:5		
9-TONE SCALES:					
#137	MS 9-II:1,4,7				
138	MS 9-I:6				
139	MS 9-I:1				
140	MS 9-I:7				
141	MS 9-I:2				
142	MS 9-III:1				
143	MS 9-IV:1				
144	MS 9-I:5				
145	MS 9-I:9				
146	Octave +				
147	MS 9-I:4				
148	Octave +				
149	Octave +				

End of Chart #60

CHAPTER 21

THE RETROGRADE-INVERSION OF THE MODAL SERIES

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A SHORT EXPLANATION OF THE RETROGRADE-INVERSION OF THE MODAL SERIES

The note at the bottom of the first page of this Section said that this Section consists of 3 large steps that should be looked at *in order*. Chapter 19, starting on page 245 with its retrograde-inversions of the scales is Step #1. Then the Modal Series of Chapter 20, starting on page 259 is Step #2. Now we come to Step #3, which, logically, is the retrograde-inversions of the Modal Series. This cannot be readily understood without having first read the other two steps.

If a Modal Series is put into retrograde-inversion, scale by scale, it will often produce (in this "backward" form) another one of the Modal Series found in this book or its own Modal Series again. However, this second Modal Series (or its own Modal Series reproduced a second time) will not be just the Modal Series in its regular order -- it will be the second Modal Series in an *inverted* order! The Modal Series Steps from top to bottom will be 7, 6, 5, 4, 3, 2, 1! Now, if you don't find that even partly as exciting as I did when I first stumbled onto it, then I will cease trying to amaze you and suggest that you go watch the "sitcoms" on television instead! This was a thoroughly unexpected "find" for me, and I wouldn't trade the thrill it gave me for a good chunk of money. Perhaps you are more logical than I and could see it coming -- but I didn't.

Anyway, a look at Chart #61, below, will explain this much more quickly than words. We will use the familiar Diatonic Modes (Modal Series 7-I) for our example.

NOTE: Remember, the Scale Number can be used to look up any individual scale in The Grand Finale (starting on page 405) for all of the information on that scale that this book contains.

RETROGRADE-INVERSION OF A MODAL SERIES SHOWN WITH INTERVALS

CHART #61

		Backwards Is	
MS 7-&:1 #49 Nat. min. . .	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1	=	1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 MS 7-I:7 #62 Mixolydian
2 #12 Locrian . . .	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1-1	=	1-1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$. .
3 #1 Major	1-1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$	=	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1-1 . .
4 #50 Dorian	1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1	SAME	1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1
5 #15 Phrygian	$\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1-1	=	1-1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$
6 #51 Lydian	1-1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$	=	$\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1-1
7 #62 Mixolydian.	1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1	=	1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1
			6 #51 Lydian
			5 #15 Phrygian
			4 #50 Dorian
			3 #1 Major (Ionian)
			2 #12 Locrian
			1 #49 Nat min (Aeol.)

End of Chart #61

REGARDING HOW MANY TIMES ONE MODAL SERIES FORMS ANOTHER BACKWARDS

I found it amazing how many of the Modal Series worked in this way with Modal Series that I already had. Of course, any series of numbers can be put backwards, but to put them backwards and then have them come out another series of numbers that I already had somewhere else is another thing.

Below is a chart showing the distribution of Modal Series in the various Tone Groups that form other Modal Series in this book.

NUMBER OF TIMES A MODAL SERIES PUT BACKWARDS FORMS ANOTHER "KNOWN" MODAL SERIES

CHART #62

Tone Group	How many MS in Tone Grp	Forms Itself, Inverted	Forms One of Other MS, Inv.	Forms No Other Known MS
5-Tone	16	2	10	4
6-Tone	19	6	8	5
7-Tone	18	4	10	4
8-Tone	9	4	4	1
9-Tone	4	2	2	-

End of Chart #62

The charts on the next few pages don't show the intervals, just the Modal Series Numbers and Scale Numbers. I figured that the intervals are shown in enough other places so that I don't have to bother with them here.

They are arranged by Tone Groups: 5-Tone MS, 6-Tone MS, 7-Tone MS, 8-Tone MS, and lastly 9-Tone MS. Each group has its own summary after its Modal Series are shown backwards in relation to another Modal Series. Then after the 9-Tone MS are shown, there is a summary of all of the Tone Groups. I think that summaries are very important in seeing the over-all picture.

NOTE: Don't forget that the Scale Numbers can be used to locate any specific scale in The Grand Finale (starting on page 405) to find out more about that scale.

RETROGRADE-INVERSIONS OF 5-TONE MODAL SERIES (MS 5)
(with SUMMARY)

CHART #63

(Kumoi)	MS 5-I:		SCL.#		BACKWARDS		SCL.#		MS 5-II:
	1	-	#186	.	.	.	#161	-	1 (Semi. Pent.)
	2	-	163	.	.	.	189	-	5
	3	-	167	.	.	.	153	-	4
	4	-	190	.	.	.	181	-	3
	5	-	159	.	.	.	187	-	2
(Hirajoshi)	MS 5-III:		SCL.#		BACKWARDS		SCL.#		MS 5-IV:
	1	-	#184	.	.	.	#179	-	3 (Pelog)
	2	-	157	.	.	.	183	-	2
	3	-	178	.	.	.	155	-	1
	4	-	162	.	.	.	180	-	5
	5	-	173	.	.	.	156	-	4
(Pentatonic)	MS 5-V:		SCL.#		BACKWARDS		SCL.#		MS 5-V: (SAME MS)
	1	-	#192	.	.	.	#164	-	2 (Pentatonic)
	2	-	164	.	.	.	192	-	1
	3	-	197	.	.	.	158	-	5
	4	-	191	.	.	SAME	191	-	4
	5	-	158	.	.	.	197	-	3
(Japan. Pent.)	MS 5-VI:		SCL.#		BACKWARDS		SCL.#		MS 5-
	1	-	#195	.	.	.			
	2	-	188	.	.	.			
	3	-	171	.	.	.			
	4	-	165	.	.	.			
	5	-	168	.	.	.			
MS 5-VII:			SCL.#		BACKWARDS		SCL.#		MS 5-VII: (SAME MS)
	1	-	#154	.	.	.	#---	-	3
	2	-	166	.	.	SAME	166	-	2
	3	-	---	.	.	.	154	-	1
	4	-	196	.	.	.	---	-	5
	5	-	---	.	.	.	196	-	4
MS 5-VIII:			SCL.#		BACKWARDS		SCL.#		MS 5-IX:
	1	-	#182	.	.	.	#---	-	4
	2	-	160	.	.	.	---	-	3
	3	-	194	.	.	.	---	-	2
	4	-	---	.	.	.	185	-	1
	5	-	---	.	.	.	198	-	5

(cont'd)

Chart #63: 5-Tone MS, Ret-Inv (cont'd)

MS 5-X:	SCL.#	BACKWARDS	SCL.#	MS 5-XI:
1 -	#177	. . . . = . . . .	#---	2
2 -	---	. . . . = . . . .	172	1
3 -	---	. . . . = . . . .	---	5
4 -	---	. . . . = . . . .	---	4
5 -	174	. . . . = . . . .	---	3
MS 5-XII:	SCL.#	BACKWARDS	SCL.#	MS 5-XIII:
1 -	#170	. . . . = . . . .	#---	3
2 -	---	. . . . = . . . .	---	2
3 -	---	. . . . = . . . .	169	1
4 -	---	. . . . = . . . .	---	5
5 -	---	. . . . = . . . .	---	4
MS 5-XIV:	SCL.#	BACKWARDS	SCL.#	MS 5---
1 -	#175 =		
2 -	--- =		
3 -	--- =		
4 -	--- =		
5 -	--- =		
MS 5-XV:	SCL.#	BACKWARDS	SCL.#	MS 5---
1 -	#176 =		
2 -	--- =		
3 -	--- =		
4 -	--- =		
5 -	--- =		
MS 5-XVI:	SCL.#	BACKWARDS	SCL.#	MS 5---
1 -	#193 =		
2 -	--- =		
3 -	--- =		
4 -	--- =		
5 -	--- =		

SUMMARY OF 5-TONE MODAL SERIES (MS 5)
BACKWARDS

(Kumoi)	MS 5-I	. . . . = . . . .	MS 5-II	(Semitonal Pent.)
(Hirajoshi)	MS 5-III	. . . . = . . . .	MS 5-IV	(Pelog)
(Pentatonic)	MS 5-V	. . . . SAME . .	MS 5-V	(Pentatonic)
(Japanese Pentatonic)	MS 5-VI =		
	MS 5-VII	. . . . SAME . .	MS 5-VII	(Japanese Pent.)
	MS 5-VIII	. . . . = . . . .	MS 5-IX	
	MS 5-X	. . . . = . . . .	MS 5-XI	
	MS 5-XII	. . . . = . . . .	MS 5-XIII	
	MS 5-XIV =		
	MS 5-XV =		
	MS 5-XVI =		

RETROGRADE-INVERSIONS OF 6-TONE MODAL SERIES (MS 5)
(with SUMMARY)

CHART #64

MS 6-I:		SCL.#		BACKWARDS		SCL.#		MS 6-II:
1	-	#90	.	.	.	#100	-	6
2	-	68	.	.	.	--	-	5
3	-	86	.	.	.	--	-	4
4	-	77	.	.	.	94	-	3
5	-	99	.	.	.	--	-	2
6	-	102	.	.	.	--	-	1
MS 6-III:		SCL.#	.	BACKWARDS	.	SCL.#		MS 6-III (SAME MS)
1	-	#103	.	.	.	#75	-	6
2	-	92	.	.	.	95	-	5
3	-	72	.	.	.	96	-	4
4	-	96	.	.	.	72	-	3
5	-	95	.	.	.	92	-	2
6	-	75	.	.	.	103	-	1
MS 6-IV:		SCL.#	.	BACKWARDS	.	SCL.#		MS 6-V:
1	-	#93	.	.	.	#85	-	6
2	-	--	.	.	.	--	-	5
3	-	--	.	.	.	--	-	4
4	-	88	.	.	.	--	-	3
5	-	73	.	.	.	--	-	2
6	-	--	.	.	.	--	-	1
MS 6-VI:		SCL.#	.	BACKWARDS	.	SCL.#		MS 6-VI: (SAME MS)
1	-	#--	.	.	.	#--	-	6
2	-	84	.	.	.	91	-	5
3	-	--	.	.	.	--	-	4
4	-	--	.	.	.	--	-	3
5	-	91	.	.	.	84	-	2
6	-	--	.	.	.	--	-	1
MS 6-VII:		SCL.#	.	BACKWARDS	.	SCL.#		MS 6-VII:(SAME MS)
1	-	#82	.	.	.	#80	-	6
2	-	80	.	.	.	82	-	5
3	-	82	.	.	.	80	-	4
4	-	80	.	.	.	82	-	3
5	-	82	.	.	.	80	-	2
6	-	80	.	.	.	82	-	1

(cont'd)

Chart #64: 6-Tone MS, Ret-Inv (cont'd)

MS 6-VIII:	SCL.#	BACKWARDS	SCL.#	MS 6-VIII:
1 -	#79	. . . . . = . . . . .	#--	6 (SAME MS)
2 -	--	. . . . . = . . . . .	--	5
3 -	--	. . . . . = . . . . .	--	4
4 -	--	. . . . . = . . . . .	--	3
5 -	--	. . . . . = . . . . .	--	2
6 -	--	. . . . . = . . . . .	79	1
MS 6-IX:	SCL.#	BACKWARDS	SCL.#	MS 6-IX:
1 -	#71	. . . . . = . . . . .	#--	6 (SAME MS)
2 -	--	. . . . . = . . . . .	--	5
3 -	74	. . . . . = . . . . .	--	4
4 -	--	. . . . . = . . . . .	74	3
5 -	--	. . . . . = . . . . .	71	2
6 -	--	. . . . . = . . . . .	--	1
MS 6-X:	SCL.#	BACKWARDS	SCL.#	MS 6-XI:
1 -	#98	. . . . . = . . . . .	#*m	5
2 -	--	. . . . . = . . . . .	--	4
3 -	--	. . . . . = . . . . .	--	3
4 -	--	. . . . . = . . . . .	--	2
5 -	76	. . . . . = . . . . .	65	1
6 -	--	. . . . . = . . . . .	--	6
MS 6-XII:	SCL.#	BACKWARDS	SCL.#	MS 6-XIII:
1 -	#67	. . . . . = . . . . .	#78	4
2 -	--	. . . . . = . . . . .	--	3
3 -	--	. . . . . = . . . . .	--	2
4 -	--	. . . . . = . . . . .	66	1
5 -	--	. . . . . = . . . . .	--	6
6 -	--	. . . . . = . . . . .	--	5
MS 6-XIV: (WHOLE TONE)	SCL.#	BACKWARDS	SCL.#	MS 6-XIV: (WHOLE TONE)
1 -	#97	. . . . . = . . . . .	#97	6 (WHOLE TONE)
2 -	97	. . . . . = . . . . .	97	5
3 -	97	. . . . . = . . . . .	97	4
4 -	97	. . . . . = . . . . .	97	3
5 -	97	. . . . . = . . . . .	97	2
6 -	97	. . . . . = . . . . .	97	1

*This is a "Missing Scale", see page 317

(cont'd)

Chart #64: 6-Tone MS, Ret-Inv (cont'd)

MS 6-XV:		SCL.#	BACKWARDS	SCL.#	MS 6---
1	-	#69 =		
2	-	-- =		
3	-	-- =		
4	-	-- =		
5	-	-- =		
6	-	-- =		
MS 6-XVI:		SCL.#	BACKWARDS	SCL.#	MS 6---
1	-	#81 =		
2	-	-- =		
3	-	-- =		
4	-	-- =		
5	-	-- =		
6	-	-- =		
MS 6-XVII:		SCL.#	BACKWARDS	SCL.#	MS 6---
1	-	#70 =		
2	-	-- =		
3	-	-- =		
4	-	-- =		
5	-	-- =		
6	-	-- =		
MS 6-XVIII:		SCL.#	BACKWARDS	SCL.#	MS 6---
1	-	#83 =		
2	-	-- =		
3	-	-- =		
4	-	-- =		
5	-	-- =		
6	-	-- =		
MS 6-XIX:		SCL.#	BACKWARDS	SCL.#	MS 6---
1	-	#89 =		
2	-	-- =		
3	-	-- =		
4	-	-- =		
5	-	-- =		
6	-	-- =		

(cont'd)

Chart #64: 6-Tone MS, Ret-Inv (cont'd)

SUMMARY OF 6-TONE MODAL SERIES (MS 6)
BACKWARDS

MS 6-I = . . .	MS 6-II
MS 6-III . . SAME . .	MS 6-III
MS 6-IV = . . .	MS 6-V
MS 6-VI . . . SAME . .	MS 6-VI
MS 6-VII . . SAME . .	MS 6-VII
MS 6-VIII . . SAME . .	MS 6-VIII
MS 6-IX . . . SAME . .	MS 6-IX
MS 6-X = . . .	MS 6-XI
MS 6-XII . . . = . . .	MS 6-XIII
MS 6-XIV . . SAME . .	MS XIV
MS 6-XV =	
MS 6-XVI . . . =	
MS 6-XVII . . . =	
MS 6-XVIII . . =	
MS 6-XIX . . . =	

End of Chart #64

**RETROGRADE-INVERSIONS OF 7-TONE MODAL SERIES (MS 7)
(with SUMMARY)**

CHART #65

MS 7-I:	SCL.#	BACKWARDS	SCL.#	MS 7-I:
1 -	#49	=	#62	7 (SAME MS)
2 -	12	=	51	6
3 -	1	=	15	5
4 -	50	SAME	50	4
5 -	15	=	1	3
6 -	51	=	12	2
7 -	62	=	49	1

MS 7-II:	SCL.#	BACKWARDS	SCL.#	MS 7-II:
1 -	#16	=	#34	7 (SAME MS)
2 -	52	=	8	6
3 -	55	=	45	5
4 -	61	SAME	61	4
5 -	45	=	55	3
6 -	8	=	52	2
7 -	34	=	16	1

MS 7-III:	SCL.#	BACKWARDS	SCL.#	MS 7-III:
1 -	#57	=	#54	7 (SAME MS)
2 -	--	=	--	6
3 -	--	=	53	5
4 -	6	SAME	6	4
5 -	53	=	--	3
6 -	--	=	--	2
7 -	54	=	57	1

MS 7-IV:	SCL.#	BACKWARDS	SCL.#	MS 7-IV:
1 -	#28	=	#40	7 (SAME MS)
2 -	--	=	--	6
3 -	--	=	--	5
4 -	30	SAME	30	4
5 -	--	=	--	3
6 -	--	=	--	2
7 -	40	=	28	1

MS 7-V:	SCL.#	BACKWARDS	SCL.#	MS 7-VI:
1 -	#25	=	#--	7
2 -	4	=	--	6
3 -	20	=	26	5
4 -	9	=	--	4
5 -	41	=	29	3
6 -	3	=	--	2
7 -	23	=	10	1

(cont'd)

Chart #65: 7-Tone MS, Ret-Inv (cont'd)

MS 7-VII:	SCL.#	BACKWARDS	SCL.#	MS 7-VIII:
1	- #13	. . . . . = . . . . .	#37	- 7
2	- 56	. . . . . = . . . . .	11	- 6
3	- 44	. . . . . = . . . . .	46	- 5
4	- 31	. . . . . = . . . . .	60	- 4
5	- *f	. . . . . = . . . . .	--	- 3
6	- --	. . . . . = . . . . .	--	- 2
7	- 47	. . . . . = . . . . .	33	- 1
MS 7-IX:	SCL.#	BACKWARDS	SCL.#	MS 7-X:
1	- #42	. . . . . = . . . . .	#58	- 7
2	- 27	. . . . . = . . . . .	--	- 6
3	- --	. . . . . = . . . . .	--	- 5
4	- --	. . . . . = . . . . .	--	- 4
5	- 14	. . . . . = . . . . .	2	- 3
6	- --	. . . . . = . . . . .	--	- 2
7	- 59	. . . . . = . . . . .	43	- 1
MS 7-XI:	SCL.#	BACKWARDS	SCL.#	MS 7-XII:
1	- #21	. . . . . = . . . . .	#*k	- 3
2	- --	. . . . . = . . . . .	--	- 2
3	- --	. . . . . = . . . . .	22	- 1
4	- --	. . . . . = . . . . .	--	- 7
5	- --	. . . . . = . . . . .	*d	- 6
6	- *c	. . . . . = . . . . .	--	- 5
7	- --	. . . . . = . . . . .	--	- 4
MS 7-XIII:	SCL.#	BACKWARDS	SCL.#	MS 7-XIV:
1	- #32	. . . . . = . . . . .	#48	- 1
2	- --	. . . . . = . . . . .	--	- 7
3	- --	. . . . . = . . . . .	17	- 6
4	- --	. . . . . = . . . . .	--	- 5
5	- --	. . . . . = . . . . .	--	- 4
6	- *b	. . . . . = . . . . .	--	- 3
7	- --	. . . . . = . . . . .	--	- 2
MS 7-XV:	SCL.#	BACKWARDS	SCL.#	MS 7---
1	- #18 =		
2	- -- =		
3	- -- =		
4	- -- =		
5	- -- =		
6	- -- =		
7	- -- =		

*This is a "Missing Scale", see page 317

(cont'd)

Chart #65: 7-Tone MS, Ret-Inv (cont'd)

MS 7-XVI:		SCL.#		BACKWARDS	SCL.#	MS 7---		
1	-	#19	.	.	.	.	.	=
2	-	--	=
3	-	--	=
4	-	--	=
5	-	--	=
6	-	--	=
7	-	--	=

MS 7-XVII:		SCL.#		BACKWARDS	SCL.#	MS 7---		
1	-	#24	.	.	.	.	.	=
2	-	--	=
3	-	--	=
4	-	--	=
5	-	--	=
6	-	--	=
7	-	--	=

MS 7-XVIII:		SCL.#		BACKWARDS	SCL.#	MS 7---		
1	-	#38	.	.	.	.	.	=
2	-	--	=
3	-	--	=
4	-	--	=
5	-	--	=
6	-	--	=
7	-	--	=

 (cont'd)

Chart #65: 7-Tone MS, Ret-Inv (cont'd)

SUMMARY OF 7-TONE MODAL SERIES (MS 7)

BACKWARDS					
MS 7-I	. . .	SAME	. .	MS 7-I	
MS 7-II	. . .	SAME	. .	MS 7-II	
MS 7-III	. .	SAME	. .	MS 7-III	
MS 7-IV	. . .	SAME	. .	MS 7-IV	
MS 7-V	. . . .	=	. . .	MS 7-VI	
MS 7-VII	. . .	=	. . .	MS 7-VIII	
MS 7-IX	. . . .	=	. . .	MS 7-X	
MS 7-XI	. . . .	=	. . .	MS 7-XII	
MS 7-XIII	. . .	=	. . .	MS 7-XIV	
MS 7-XV	. . . .	=		
MS 7-XVI	. . .	=			
MS 7-XVII	. . .	=			
MS 7-XVIII	. .	=			

End of Chart #65

RETROGRADE-INVERSIONS OF 8-TONE MODAL SERIES (MS 8)
(with SUMMARY)

CHART #66

MS 8-I:	SCL.#	BACKWARDS	SCL.#	MS 8-I:
1 -	#131	. . . . . = . . . .	#114	8 (SAME MS)
2 -	123	. . . . . = . . . .	128	7
3 -	106	. . . . . = . . . .	136	6
4 -	107	. . . . . = . . . .	116	5
5 -	116	. . . . . = . . . .	107	4
6 -	136	. . . . . = . . . .	106	3
7 -	128	. . . . . = . . . .	131	2
8 -	114	. . . . . = . . . .	114	1

MS 8-II:	SCL.#	BACKWARDS	SCL.#	MS 8-II:
1 -	#129	. . . . . = . . . .	#---	7 (SAME MS)
2 -	---	. . . . . = . . . .	---	6
3 -	134	. . . . . = . . . .	111	5
4 -	---	. . . . . = . . . .	---	4
5 -	111	. . . . . = . . . .	134	3
6 -	---	. . . . . = . . . .	---	2
7 -	---	. . . . . = . . . .	129	1
8 -	---	. . . . . = . . . .	---	8

MS 8-III:	SCL.#	BACKWARDS	SCL.#	MS 8-IV:
1 -	#133	. . . . . = . . . .	#---	8
2 -	122	. . . . . = . . . .	---	7
3 -	105	. . . . . = . . . .	---	6
4 -	104	. . . . . = . . . .	---	5
5 -	---	. . . . . = . . . .	---	4
6 -	130	. . . . . = . . . .	---	3
7 -	117	. . . . . = . . . .	---	2
8 -	132	. . . . . = . . . .	110	1

MS 8-V:	SCL.#	BACKWARDS	SCL.#	MS 7-V:
1 -	#125	. . . . . = . . . .	#109	8 (SAME MS)
2 -	109	. . . . . = . . . .	125	7
3 -	125	. . . . . = . . . .	109	6
4 -	109	. . . . . = . . . .	125	5
5 -	125	. . . . . = . . . .	109	4
6 -	109	. . . . . = . . . .	125	3
7 -	125	. . . . . = . . . .	109	2
8 -	109	. . . . . = . . . .	125	1

(cont'd)

Chart #66: 8-Tone MS, Ret-Inv (cont'd)

MS 8-VI:	SCL.#	BACKWARDS	SCL.#	MS 8-VII:
1	- #115	. . . . . = . . . . .	#---	- 6
2	- ---	. . . . . = . . . . .	---	- 5
3	- 126	. . . . . = . . . . .	121	- 4
4	- 113	. . . . . = . . . . .	---	- 3
5	- ---	. . . . . = . . . . .	---	- 2
6	- 112	. . . . . = . . . . .	127	- 1
7	- ---	. . . . . = . . . . .	---	- 8
8	- ---	. . . . . = . . . . .	---	- 7
MS 8-VIII:	SCL.#	BACKWARDS	SCL.#	MS 8-VIII:
1	- #120	. . . . . = . . . . .	#---	- 4 (SAME MS)
2	- ---	. . . . . = . . . . .	---	- 3
3	- ---	. . . . . = . . . . .	---	- 2
4	- ---	. . . . . = . . . . .	120	- 1
5	- ---	. . . . . = . . . . .	---	- 8
6	- ---	. . . . . = . . . . .	---	- 7
7	- ---	. . . . . = . . . . .	---	- 6
8	- ---	. . . . . = . . . . .	---	- 5
MS 8-IX:	SCL.#	BACKWARDS	SCL.#	MS 8---
1	- #118 =		
2	- --- =		
3	- --- =		
4	- --- =		
5	- --- =		
6	- --- =		
7	- --- =		
8	- --- =		

SUMMARY OF 8-TONE MODAL SERIES (MS 8)

	BACKWARDS	
MS 8-I	. . . SAME . .	MS 8-I
MS 8-II	. . . SAME . .	MS 8-II
MS 8-III	. . . = . . .	MS 8-IV
MS 8-V	. . . SAME . .	MS 8-V
MS 8-VI	. . . = . . .	MS 8-VII
MS 8-VIII	. . . SAME . .	MS 8-VIII
MS 8-IX =	

RETROGRADE-INVERSIONS OF 9-TONE MODAL SERIES (MS 9)
(with SUMMARY)

CHART #67

MS 9-I:	SCL.#	BACKWARDS	SCL.#	MS 9-I:
1 -	#139	. . . . . = . . . . .	#145	9 (SAME MS)
2 -	141	. . . . . = . . . . .	---	8
3 -	---	. . . . . = . . . . .	140	7
4 -	147	. . . . . = . . . . .	138	6
5 -	144	. . . . . SAME	144	5
6 -	138	. . . . . = . . . . .	147	4
7 -	140	. . . . . = . . . . .	---	3
8 -	---	. . . . . = . . . . .	141	2
9 -	145	. . . . . = . . . . .	139	1
MS 9-II:	SCL.#	BACKWARDS	SCL.#	MS 9-II:
1 -	#137	. . . . . SAME	#137	7 (SAME MS)
2 -	---	. . . . . = . . . . .	---	6
3 -	---	. . . . . = . . . . .	---	5
4 -	137	. . . . . SAME	137	4
5 -	---	. . . . . = . . . . .	---	3
6 -	---	. . . . . = . . . . .	---	2
7 -	137	. . . . . SAME	137	1
8 -	---	. . . . . = . . . . .	---	9
9 -	---	. . . . . = . . . . .	---	8
MS 9-III:	SCL.#	BACKWARDS	SCL.#	MS 9-IV:
1 -	#142	. . . . . = . . . . .	#---	8
2 -	---	. . . . . = . . . . .	---	7
3 -	---	. . . . . = . . . . .	---	6
4 -	---	. . . . . = . . . . .	---	5
5 -	---	. . . . . = . . . . .	---	4
6 -	---	. . . . . = . . . . .	---	3
7 -	---	. . . . . = . . . . .	---	2
8 -	---	. . . . . = . . . . .	143	1
9 -	---	. . . . . = . . . . .	---	9

SUMMARY OF 9-TONE MODAL SERIES (MS 9)

	BACKWARDS	
MS 9-I	. . . SAME . .	MS 9-I
MS 9-II	. . . SAME . .	MS 9-II
MS 9-III	. . . = . . .	MS 9-IV

**SUMMARY OF RESULTS CHARTS #63 - #67, THE RETROGRADE-INVERSION
OF ALL MODAL SERIES OF THIS BOOK**

CHART #68

5-TONE MODAL SERIES

BACKWARDS		
MS 5-I	=	MS 5-II
MS 5-III	=	MS 5-IV
MS 5-V	SAME	MS 5-V
MS 5-VI	=	---
MS 5-VII	SAME	MS 5-VII
MS 5-VIII	=	MS 5-IX
MS 5-X	=	MS 5-XI
MS 5-XII	=	MS 5-XIII
MS 5-XIV	=	---
MS 5-XV	=	---
MS 5-XVI	=	---

7-TONE MODAL SERIES

BACKWARDS		
MS 7-I	SAME	MS 7-I
MS 7-II	SAME	MS 7-II
MS 7-III	SAME	MS 7-III
MS 7-IV	SAME	MS 7-IV
MS 7-V	=	MS 7-VI
MS 7-VII	=	MS 7-VIII
MS 7-IX	=	MS 7-X
MS 7-XI	=	MS 7-XII
MS 7-XIII	=	MS 7-XIV
MS 7-XV	=	---
MS 7-XVI	=	---
MS 7-XVII	=	---
MS 7-XVIII	=	---

6-TONE MODAL SERIES

BACKWARDS		
MS 6-I	=	MS 6-II
MS 6-III	SAME	MS 6-III
MS 6-IV	=	MS 6-V
MS 6-VI	SAME	MS 6-VI
MS 6-VII	SAME	MS 6-VII
MS 6-VIII	SAME	MS 6-VIII
MS 6-IX	SAME	MS 6-IX
MS 6-X	=	MS 6-XI
MS 6-XII	=	MS 6-XIII
MS 6-XIV	SAME	MS XIV
MS 6-XV	=	---
MS 6-XVI	=	---
MS 6-XVII	=	---
MS 6-XVIII	=	---
MS 6-XIX	=	---

8-TONE MODAL SERIES

BACKWARDS		
MS 8-I	SAME	MS 8-I
MS 8-II	SAME	MS 8-II
MS 8-III	=	MS 8-IV
MS 8-V	SAME	MS 8-V
MS 8-VI	=	MS 8-VII
MS 8-VIII	SAME	MS 8-VIII
MS 8-IX	=	---

9-TONE MODAL SERIES

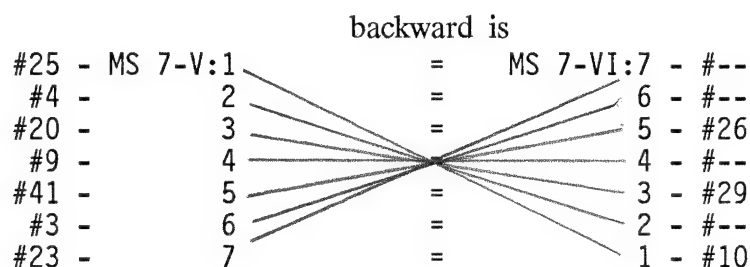
BACKWARDS		
MS 9-I	SAME	MS 9-I
MS 9-II	SAME	MS 9-II
MS 9-III	=	MS 9-IV

WHICH SCALE SHOULD BE #1 IN A MODAL SERIES?

Let me start out by stating clearly that it is entirely arbitrary which scale in a Modal Series is designated as MS:SPT #1. I have chosen the first Modal Series Scale Point Tone (MS:SPT) for a specific reason -- I like symmetry. By this, I mean that I like, in a 7-Tone Scale, for instance, to see MS:SPT #1 with a corresponding MS:SPT #7 in its backward Modal Series, thus counting from one to seven in the first Modal Series and from seven to one in the corresponding backward Modal Series:

#1	=	#7
#2	=	#6
#3	=	#5
#4	=	#4
#5	=	#3
#6	=	#2
#7	=	#1

This looks nice and neat. Also, that way, if I draw lines connecting #1 in the first Modal Series with #1 in the corresponding backward Modal Series, and connecting #2 with #2, #3 with #3, etc., it makes a nice neat star-shaped pattern:



I know -- because I did this in all of my Modal Series! In fact, except for several of the 5-Tone Modal Series (see Chart #69 on next page) (which had already been established with Modal Series Numbers in my source materials), throughout this book I didn't designate which scale of a Modal Series would be MS:SPT #1 until *after* I had made a "pattern" with the Modal Series and its "backward" Modal Series. That way there could be #1 to #7 on one side and #7 to #1 on the other side. (Of course, an exception to this is those Modal Series that have just one scale in them. In that case I always put the one scale as MS:SPT #1.)

As a matter of fact, the already-established 5-Tone Modal Series *do* have "patterns" other than a neat star when their #1 and #1, etc. are connected. It really makes no difference, though. A backward scale doesn't change, but it could have been a different MS:SPT number -- which changes the "pattern". On the next page I have shown the patterns these make.

REMEMBER: The Scale Numbers can be used to look up individual scales in The Grand Finale (starting on page 405) for more information on each scale.

PATTERNS MADE BY THE ALREADY-NUMBERED 5-TONE MODAL SERIES

CHART #69

backward is

#186 Kumoi #1 -- MS 5-I:1	=	1 of MS 5-II -- #161 Semi. P. #1
#163 Kumoi #2 -- MS 5-I:2	=	5 of MS 5-II -- #189 Semi. P. #5
#167 Kumoi #3 -- MS 5-I:3	=	4 of MS 5-II -- #153 Semi. P. #4
#190 Kumoi #4 -- MS 5-I:4	=	3 of MS 5-II -- #181 Semi. P. #3
#159 Kumoi #5 -- MS 5-I:5	=	2 of MS 5-II -- #187 Semi. P. #2

backward is

#184 Hirajoshi #1 -- MS 5-III:1	=	3 of MS 5-IV -- #179 Pelog #3
#157 Hirajoshi #2 -- MS 5-III:2	=	2 of MS 5-IV -- #183 Pelog #2
#178 Hirajoshi #3 -- MS 5-III:3	=	1 of MS 5-IV -- #155 Pelog #1
#162 Hirajoshi #4 -- MS 5-III:4	=	5 of MS 5-IV -- #180 Pelog #5
#173 Hirajoshi #5 -- MS 5-III:5	=	4 of MS 5-IV -- #156 Pelog #4

backward is

#192 Pentatonic #1 -- MS 5-V:1	=	2 of MS 5-V -- #164 Pentatonic #2
#164 Pentatonic #2 -- MS 5-V:2	=	1 of MS 5-V -- #192 Pentatonic #1
#197 Pentatonic #3 -- MS 5-V:3	=	5 of MS 5-V -- #158 Pentatonic #5
#191 Pentatonic #4 -- MS 5-V:4	=	4 of MS 5-V -- #191 Pentatonic #4
#158 Pentatonic #5 -- MS 5-V:5	=	3 of MS 5-V -- #197 Pentatonic #3

CHAPTER 22

GAPS & "MISSING" SCALES

CONTENTS OF CHAPTER 22:

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Regarding "Missing" Scales	315
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Regarding "Missing" Modal Series Containing Some of My "Missing" Scales	318
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SCALES WITH BACKWARD SCALES OF ONLY AN EMPTY MODAL SERIES SCALE POINT

When I listed all of the scales in a retrograde-inverted (backward) form to see if they made a new scale (Chapter 19), not all of the scales formed new "known" scales. However, there are two asterisk (**) beside some scales that have no backward scale. This asterisk leads to a footnote which states that the marked scale is part of a Modal Series that is in this book. Similarly, when I listed the Modal Series with their intervals (Chapter 20), some of the blank places have an asterisk (*) leading to a footnote. This footnote states that these empty places are the places that the backwards-of-a-known-scale would be.

Now that we have looked at Modal Series and backward Modal Series in Chapters 20 - 21, this should all make more sense. For instance, look at Modal Series (MS) 7-IX and X. They form each other when put into retrograde inversion:

MS 7-IX:	Backwards	MS 7-X:
1 - #42	=	#58 - 7
2 - 27	=	--- - 6
3 - ---	=	--- - 5
4 - ---	=	--- - 4
5 - 16	=	2 - 3
6 - ---	=	--- - 2
7 - 59	=	43 - 1

Notice that while part of the Modal Series spaces are filled, not all of the spaces are filled. Next, notice that in MS 7-IX that three of the Scale Points (1, 2, and 7) have Scale Numbers (#42, 16, and 59), and these have Scale Numbers opposite them (#58, 2, and 43). And now notice that the second Scale Point Tone of Modal Series 7-IX has a scale, #27 -- but there is no opposing Scale Number at the sixth Scale Point Tone of Modal Series 7-X.

But Scale #27 isn't just a scale with no connections with any other scale. It is definitely part of Modal Series (MS 7-IX), and this Modal Series 7-IX is a "backward" Modal Series of yet a second Modal Series (MS 7-X). We could call them "opposing" or "opposite" Modal Series.

So we might say that Scale #27 belongs both with its own Modal Series, MS 7-IX, and also with its modally retrograde-inverted (opposite) Modal Series, MS 7-X. Therefore, we might well say that the opposite (or backward) scale of MS 7-IX:2, Scale #27 would be MS 7-X:6, for which I have no scale as of the writing of this book. For this reason I simply say that the backward scale of Scale #27 is "part of a Modal Series", in this case being the sixth scale of MS 7-X. In other words, Scale #27 has an "unknown" (to me) backward scale which can be designated by its place in the known Modal Series which is the opposite of its own Modal Series.

Now back to the first paragraph on this page. The scales with the asterisk on those charts are either (1) scales with a backward scale that is part of a Modal Series, or else (2) the empty Modal Series spaces themselves which make up these "unknown backward scales". On the next page is a list of the scales and their "unknown" backward scales.

SCALES WITH "UNKNOWN" BACKWARD SCALES

CHART #70

5-TONE SCALES:

Backwards

*#154	Japanese	MS 5-VII:1	=	MS 5-VII:3	(same MS)
#160	Javanese	MS 5-VIII:2	=	MS 5-IX:3	
#169	Diminished Pentatonic	MS 5-XIII:1	=	MS 5-XII:3	
#170	Jazz Dominant Pentatonic	MS 5-XII:1	=	MS 5-XIII:3	
#172	Vibhasa	MS 5-XI:1	=	MS 5-X:2	
#174	Pentatonic Dominant	MS 5-X:5	=	MS 5-XI:3	
#177	Scriabin	MS 5-X:1	=	MS 5-XI:2	
#182	Bulgarian	MS 5-VIII:1	=	MS 5-IX:4	
#185	African	MS 5-IX:1	=	MS 5-VIII:4	
#194	India	MS 5-VIII:3	=	MS 5-IX:2	
#196	African	MS 5-VII:4	=	MS 5-VII:5	(same MS)
#198	African	MS 5-IX:5	=	MS 5-VIII:5	

6-TONE SCALES:

#66	Blues	MS 6-XIII:1	=	MS 6-XII:4	
#68	Locrian 6-Tone	MS 6-I:2	=	MS 6-II:5	
#71	Abuselik	MS 6-IX:1	=	MS 6-IX:6	(same MS)
#73	In Scale	MS 6-IV:5	=	MS 6-V:2	
#74	Samanta	MS 6-IX:3	=	MS 6-IX:4	(same MS)
#79	Prometheus-Neapolitan	MS 6-VIII:1	=	MS 6-VIII:6	(same MS)
#88	Akebono	MS 6-IV:4	=	MS 6-V:3	
#98	Prometheus	MS 6-X:1	=	MS 6-XI:5**	
#99	Lydian 6-Tone	MS 6-I:5	=	MS 6-II:2	
#102	Mixolydian 6-Tone	MS 6-I:6	=	MS 6-II:1	

7-TONE SCALES:

#3	Chromatic Mixolydian	MS 7-V:6	=	MS 7-VI:2	
#4	Chromatic Dorian	MS 7-V:2	=	MS 7-VI:6	
#9	Chromatic Hypophrygian	MS 7-V:4	=	MS 7-VI:4	
#17	Marava	MS XIV:6	=	MS 7-XIII:3	
#21	India	MS 7-XI:1	=	MS 7-XII:3**	
#22	Hungarian-Major	MS 7-XII:1	=	MS 7-XI:3	
#25	Chromatic Phrygian	MS 7-V:1	=	MS 7-VI:7	
#27	Rahawi	MS 7-IX:2	=	MS 7-X:6	
#53	Leading Whole Tone	MS 7-III:5	=	MS 7-III:3	(same MS)

*Use Scale Number to look up scale in Grand Finale, starting page 405

(cont'd)

**This is one of my "missing" scales, see page 317

 Chart #70: Scales with "Unknown" Backward Scales (cont'd)

8-TONE SCALES:

Backwards

*#104	Hindu	MS 8-III:4	=	MS 8-IV:5	
#105	Locrian 8-Tone #1	MS 8-III:3	=	MS 8-IV:6	
#113	Composite #1	MS 8-VI:4	=	MS 8-VII:3	
#115	Zirafkand	MS 8-VI:1	=	MS 8-VII:6	
#117	Phrygian 8-Tone #2	MS 8-III:7	=	MS 8-IV:2	
#120	Irak	MS 8-VIII:1	=	MS 8-VIII:4	(same MS)
#122	Aeolian 8-Tone #1	MS 8-III:2	=	MS 8-IV:7	
#129	Isfahan	MS 8-II:1	=	MS 8-II:7	(same MS)
#130	Dorian 8-Tone #2	MS 8-III:6	=	MS 8-IV:3	
#133	Hindu	MS 8-III:1	=	MS IV:8	

9-TONE SCALES:

#140	Hindu	MS 9-I:7	=	MS 9-I:3	(same MS)
#141	Hindu	MS 9-I:2	=	MS 9-I:8	(same MS)
#142	Auxiliary Blues	MS 9-III:1	=	MS 9-IV:8	
#143	Bartok's 9-Tone	MS 9-IV:1	=	MS 9-III:8	

 *Use Number to look up scale in The Grand Finale, starting page 405 End of Chart #70

A SHORT EXPLANATION OF CHART #71

7-Tone Scales are to me the main type of scale. As is obvious, I base all of the Other-Tone Scales on the 7-Tone Scales. Therefore, I am particularly interested in "missing" 7-Tone Scales.

I am convinced that many of the "gaps" in the 7-Tone Modal Series could be filled by authentic ethnic scales -- I just haven't "found" them. To help me and you, the reader, in the identification and placing in a Modal Series of any 7-Tone Scales that we may locate in some source material in the future, I have put together this following chart, Chart #71 (starting on the next page). (Of course, if you "find" a scale, you could always look at the intervals in the Modal Series in Chapter 20, but I like this way also.)

Chart #71 lists all of the 7-Tone Scales in this book (which aren't Combination Scales) by name in their Modal Series. Then when there is a gap in the Modal Series, this chart gives the Symbol (alterations from the Major Scale, see pages 8 and 34) and the Tetrachordal Formula (see page 23) for each of the gaps in the 7-Tone Modal Series.

NOTE: Remember, the Scale Number (#) can be used to look up any of the scales in this book in The Grand Finale, starting on page 405. This will give all of the information this book contains about each individual scale.

NOTE: The letters MS:SPT stand for Modal Series Scale Point Tone. This refers to which Modal Series (MS) of the 7-Tone Modal Series the scale belongs and where in the Modal Series a scale stands (which Scale Point Tone -- SPT).

GAPS WITHIN THE 7-TONE MODAL SERIES

CHART #71

MS:SPT	#	NAME	SYMBOL FOR GAP	FORMULA FOR GAP
MS 7-I:1	#49	Nat.minor (Aeolian)		
2	12	Locrian		
3	1	Major (Ionian)		
4	50	Dorian		
5	15	Phrygian		
6	51	Lydian		
7	62	Mixolydian		
MS 7-II:1	#16	Javanese		
2	52	Lydian-Augmented		
3	55	Overtone		
4	61	Hindustan		
5	45	Half-Diminished		
6	8	Super-Locrian		
7	34	Melodic minor		
MS 7-III:1	#57	Locrian-Major		
2	--	..... Major 3- 4- 5- 6- 7-	(7)	-1- W
3	--	..... Major 2- 2 4omit 5- 6- 7-	(2)	-1- W
4	6	Neapolitan-Major		
5	53	Leading Whole-Tone		
6	--	..... Major 4+ 5+ 7-	W	-1- (2)
7	54	Lydian-minor		
MS 7-IV:1	28	Oriental		
2	--	..... Major 2+ 5+	(13)	-1½- Dim
3	--	..... Major 2- 2 3om 5- 6- 6 7om ...	(3)	-½- (8)
4	30	Double Harmonic		
5	--	..... Major 2+ 4+ 6+	(14)	-½- (13)
6	--	..... Major 2- 3- 4- 6- 6 7omit	Dim	-1½- (3)
7	40	Hungarian-minor		
MS 7-V:1	25	Chrom. Phrygian		
2	4	Chrom. Dorian		
3	20	Chrom. Hypolydian		
4	9	Chrom. Hypophrygian		
5	41	Chrom. Hypodorian		
6	3	Chrom. Mixolydian		
7	23	Chrom. Lydian		

(cont'd)

Chart #71: Gaps in 7-Tone Modal Series (cont'd)

MS:SPT	#	NAME	SYMBOL FOR GAP	FORMULA FOR GAP
MS 7-VI:1	10	Raga Todi		
2	--	.....	Major 3om 5- 5 6om 7- 7	.... (10) - $\frac{1}{2}$ - (13)
3	29	Persian		
4	--	.....	Major 2- 2 3om 4 4+ 7om	... (3) - $\frac{1}{2}$ - (4)
5	26	Persian		
6	--	.....	Major 2+ 6omit 7- 7	..... (13) -1- (13)
7	--	.....	Major 2- 2 4om 6- 6 7om	..... (2) - $1\frac{1}{2}$ - (3)
MS 7-VII:1	13	Hijazi		
2	56	Ionian-Augmented		
3	44	Roumanian-minor		
4	31	Spanish		
5	*f	.....	Major 2+ 4+	(14) - $\frac{1}{2}$ - M
6	--	.....	Major 2- 3- 4- 5- 6-6 7om	.... Dim -1- (8)
7	47	Harmonic-minor		
MS 7-VIII:1	33	Arabic		
2	--	.....	Major 2+ 4+ 5+	(14) -1- Dim
3	--	.....	Major 2- 3- 4- 4 7omit	..... mN - $\frac{1}{2}$ - (8)
4	60	Harmonic-Major		
5	46	Zangula		
6	11	Byzantine		
7	37	Lydian-Diminished		
MS 7-IX:1	42	Greek		
2	27	Rahawi		
3	--	.....	Major 2+	(13) -1- M
4	--	.....	Major 2- 2 4+ 5+ 7omit	..... (2) -1- (8)
5	14	Neapolitan-minor		
6	--	.....	Major 4+ 6+	W - $\frac{1}{2}$ - mH
7	59	Rummel-meia		
MS 7-X:1	43	Greek		
2	--	.....	Major 2- 2 3om 5- 6- 7-	..... (3) - $\frac{1}{2}$ - W
3	2	Ananda		
4	--	.....	Major 2+ 4+ 5+ 6+	(14) -1- (7)
5	--	.....	Major 2- 3- 6- 6 7omit	..... mN -1- (3)
6	--	.....	Major 4+ 6-	W - $\frac{1}{2}$ - mH
7	58	Zenkla		

*One of my "Missing Scales", see page 317

(cont'd)

Chart #71: Gaps in 7-Tone Modal Series (cont'd)

MS:SPT	#	NAME	SYMBOL FOR GAP	FORMULA FOR GAP
MS 7-XI:1	21	India		
2	--	.....	Major 2+ 3+ 4+ 5+	(15) -1- Dim
3	--	.....	Major 3- 5- 6- 6 7omit	m -1- (8)
4	--	.....	Major 2- 3- 4- 5-5 6om 7-	Dim -1- (5)
5	--	.....	Major 3- 5+ 7-	m -1½- (15)
6	*c	.....	Major 2- 3- 4- 7-	Dim -1½- m
7	--	.....	Major 3- 4+ 5+	(8) -1- Dim
MS 7-XII:1	22	Hungarian-Major		
2	--	.....	Major 2- 3- 3 4+ 7omit	Dim -1- (4)
3	*k	.....	Major 3- 5- 6-	m -1½- (10)
4	--	.....	Major 2- 3- 4- 5- 7-	Dim -1- (14)
5	--	.....	Major 3- 5+	m -1½- Dim
6	*d	.....	Major 2- 3- 4+ 7-	(4) -1½- m
7	--	.....	Major 3+ 4+ 5+	(10) -1- Dim
MS 7-XIII:1	32	Roumanian-Major		
2	--	.....	Major 2- 2 4+ 7omit	(2) -1- (4)
3	--	.....	Major 2- 3- 5- 6-	mN -1½- (10)
4	--	.....	Major 6+	M -1- (13)
5	--	.....	Major 3- 5+ 7-	m -1½- (2)
6	*b	.....	Major 2- 3- 4+ 6- 7-	(4) -1½- mN
7	--	.....	Major 3+ 4+	(10) -1½- M
MS 7-XIV:1	48	Ptolemy's		
2	--	.....	Major 2- 3- 5- 5 6omit	mN -1½- (5)
3	--	.....	Major 5-	M -1½- (15)
4	--	.....	Major 3- 4- 7-	(7) -1½- m
5	--	.....	Major 2- 2 3omit 6- 7-	(3) -1- mN
6	17	Marava		
7	--	.....	Major 2+ 3+ 4+ 5+ 6+	(15) -1- (7)
MS 7-XV:1	18	Blues		
2	--	.....	Major 2- 2 3- 4- 7omit	(1) -1½- (17)
3	--	.....	Major 2- 2 3- 4omit 5- 6-	(1) -1½- (10)
4	--	.....	Major 2- 2 3omit 6+	(3) -1- (13)
5	--	.....	Major 2- 4omit 5- 7- 7	(5) -1½- (1)
6	--	.....	Major 2+ 3omit 5+ 6 6+	(17) -1½- (1)
7	--	.....	Major 3omit 4 4+ 5 5+	(10) -1½- (3)

*One of my "Missing Scales", see page 317

(cont'd)

Chart #71: Gaps in 7-Tone Modal Series (cont'd)

MS:SPT	#	NAME	SYMBOL FOR GAP	FORMULA FOR GAP
MS 7-XVI:1	19	Enigmatic (Verdi)		
2	--	.....	Major 2omit 3- 7- 7	(16) $-\frac{1}{2}$ - (1)
3	--	.....	Major 4+ 5 5+ 7omit	W $-\frac{1}{2}$ - (3)
4	--	.....	Major 4 4+ 6omit 7-	M $-\frac{1}{2}$ - (5)
5	--	.....	Major 3- 3.5omit 6- 7-	(7) $-\frac{1}{2}$ - (16)
6	--	.....	Major 2- 2 3- 4omit 5- 6- 7-	(1) $-1\frac{1}{2}$ - W
7	--	.....	Major 2- 2 3omit	(3) -1- M
MS 7-XVII:1	24	Enigmatic, Des-Inv		
2	--	.....	Major 2+ 4omit 6 6+	Aug -1- (1)
3	--	.....	Major 2- 4+ 6- 6 7omit	(5) $-\frac{1}{2}$ - (3)
4	--	.....	Major 2+ 3+ 6-	(15) $-\frac{1}{2}$ - mH
5	--	.....	Major 3- 3 5+ 7omit	(7) $-\frac{1}{2}$ - Aug
6	--	.....	Major 2- 2 3- 4+ 6omit 7-	(1) $-1\frac{1}{2}$ - (5)
7	--	.....	Major 2- 2 3omit 5-	(3) $-\frac{1}{2}$ - (15)
MS 7-XVIII:1	38	Conway's 7-Tone		
2	--	.....	Major 2- 3- 3 5omit 7-	Dim $-\frac{1}{2}$ - (u)
3	--	.....	Major 3- 3 4omit 5+	(7) -2- Dim
4	--	.....	Major 2- 2 3omit 4+ 7-	(a) $-\frac{1}{2}$ - m
5	--	.....	Major 2- 3omit 5- 6- 6	(d) -1- Dim
6	--	.....	Major 2omit 6- 7- 7	(u) $-\frac{1}{2}$ - (7)
7	--	.....	Major 2- 3- 3 4+ 6- 7omit	Dim -1- (a)

End of Chart #71

REGARDING "MISSING" SCALES

When I found a "new" scale in a source material, I always played it several times up and down the piano keyboard. As I searched for and listed the scales, there were other intervals combinations that "sounded like" they should be "real" scales. Other times, by reasoning about the relationships of the notes in scales or the tetrachordal combinations, other scales kept being formed that should logically "exist" "officially". For example, there are scales with the Symbols of:

Major 2- 4+ 6- and also
Major 2- 4+ 7-

So *why*, I reason, isn't there a scale with the Symbol of:

Major 2- 4+ 6- 7- ?

Try it. It sounds very good. But I have never been able to "find" it in any reference material. But since it does sound good, I know, logically, that it has to be used ethnically somewhere. (And when it is eventually "found", it will probably come from India -- also a matter of logic!) But, since I couldn't "find" it, naturally I couldn't (and didn't) include it in my book.

Now, for years I had a gap in what I considered a vital spot on Chart #7 on page 29. The 7-Tone Scale with a first tetrachord of "mH" and a second tetrachord of "M" was missing. There was just that gap sitting there. All of the spaces around it were filled. I didn't think the scale sounded very good, but, because the five most commonly used tetrachords are M, m, mN, mH, and W, and because of all the filled spaces around it, I knew that the "mH"- "M" spot *had* to be filled someplace ethnically. And I figured, logically, again, that it would be found in India. And then one day after I thought I had finished my book and was getting it in shape, I happened across another book by Alain Danielou -- and what do you think? There was the scale, mH -1- M, as big as life -- from Northern India! That was an exciting day for me, let me tell you! And in the same way, I am sure that my scale above, Major 2- 4+ 6- 7-, will some day turn up.

And other scales (or should I call them combinations of intervals to be exact?) sound pretty -- so why couldn't they be "found"? For instance, try playing the notes of "Major 2- 3- 4+ 7-" on the piano a few times. Sounds good, doesn't it? But that is another one I was never able to find in any source material. I think it stands to reason that this scale will someday "turn up", also.

Interestingly enough, several of my "missing" scales turned out to be the Backward Scales of scales I already had for my book (see Chapter 19, Charts #49 and #50). Also as I got more into putting the scales into Modal Series, I found that most of my "missing" scales fill an empty spot in one of my already existing Modal Series (see Chapter 20, Chart #56).

I eventually began keeping a list of the scales that I knew had to "be there". It was very exciting for me as, one by one, several of my "missing" scales were "found" -- a total of six of them. (In case you are curious, they are scales #11, #20, #21, #40, #56, and #58.) But there still remain more that I have never been able to locate, though I am convinced that they *must* "exist".

This following chart, Chart #72 on the next page, contains what remains of my "Try to Find" list. As you can't help but notice, my main interest is 7-Tone Scales, but don't let that stop you from looking for scales with different numbers of tones.

Add to this list on Chart #72 as you, the reader, are trying to "find" other scales that you feel sure must exist but that are not listed in this book. I even put in some lines for you to record yours. Then as you find your own missing scales or my missing ones, write "FOUND!" beside them (as I did with my six in my unfinished book!). Then add them to the back of *The Grand Finale* on one of the blank pages I have provided (starting on page 718). Also fill them in among the Backward Scales (Chapter 19, which starts on page 245) and the Modal Series (Chapter 20, which starts on page 259) earlier in this section.

Good hunting!

#	SYMBOL	INTERVALS	FORMULA	MS:SPT	BKWD
7-TONE SCALES:					
#a	Major 2- 3- 4- 6- . . .	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$. . .	Dim -1 $\frac{1}{2}$ - mH	MS 7-A:1*	*#j
#b	Major 2- 3- 4+ 6-7- .	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	(4) - $\frac{1}{2}$ mN	MS 7-XIII:6	--
#c	Major 2- 3- 4- 7- . . .	$\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	Dim -1 $\frac{1}{2}$ - m	MS 7-XI:6	--
#d	Major 2- 3- 4+ 7- . .	$\frac{1}{2}$ -1-1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1	(4) - $\frac{1}{2}$ - m	MS 7-XII:6	--
#e	Major 2- 3- 5+	$\frac{1}{2}$ -1-1 -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$	mN -1 $\frac{1}{2}$ - Dim	MS 7-C:1*	--
#f	Major 2+ 4+	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$	(14) - $\frac{1}{2}$ - M	MS 7-VII:5	--
#g	Major 2+ 4+ 6- . . .	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$. . .	(14) - $\frac{1}{2}$ - mH	MS 7-B:4*	--
#h	Major 2- 4+ 6- 7- . .	$\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	(5) - $\frac{1}{2}$ - mN	MS 7-D:1*	--
#i	Major 2+ 4+ 6- 7- .	1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1	(14) - $\frac{1}{2}$ - mN	MS 7-C:4*	--
#j	Major 2- 5+	$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$	mH -1 $\frac{1}{2}$ - Dim	MS 7-B:1*	*#a
#k	Major 3- 5- 6-	1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$	m - $\frac{1}{2}$ - (10)	MS 7-XII:3 . .	#21

#1 Major 2- 7omit 1/2-1 1/2-1/2 - 1-1-1 1/2 mH - (9) --- --
 #m Major 3- 4om 5- 6-7-
 or 1-1/2-1 1/2 - 1-1-1 (8) - W MS 6-XI:5 . . . #98
 Major 3- 4+ 5om 6-7-

End of Chart #72

[illegible]

REGARDING "MISSING" MODAL SERIES CONTAINING SOME OF MY "MISSING" SCALES:

enlarge

After listing my "missing" scales on Chart #72, I began working around with them. With the 7-Tone "Missing" Scales, lo and behold, two of them (#j and #g) are related and belong in an up-to-this-point non-existent Modal Series *with each other*. And then one more of my "missing" 7-Tone scales, #a, is backward of one of these two "missing" scales, #j. Naturally, this makes #a's Modal Series backward (retro-inverted) of #j's Modal Series. I have labeled these two "missing" Modal Series MS 7-A and MS 7-B.

Then I found that two more "missing" 7-Tone scales (#e and #i) are also related, belonging in yet another up-to-this-point non-existent Modal Series. This new, hitherto "unknown" Modal Series I have labeled MS 7-C.

Another "missing" 7-Tone scale (#k) was found to be backward of a *known* scale, #21, and was, furthermore, part of an *already existing* Modal Series, MS 7-XII. In addition, all of the rest of my "unknown" 7-Tone scales (#b, #c, #d, and #f) *except one* (#h) were found to belong to already existing Modal Series.

"Missing" Scale #h "belonged" to no other Modal Series, "missing" or "known", nor did it belong to one when put backwards. But in case you, the reader, happen to find anything connected to #h, I have included its "unknown" Modal Series as MS 7-D.

The fact that *five* of my eleven "missing" 7-Tone scales are part of *known* Modal Series and that five others have relationships among themselves, makes me even more certain that they will someday turn up as "known" scales.

These four new, "missing" Modal Series, MS 7-A, MS 7-B, MS 7-C, and MS 7-D, are shown just below in Chart #73.

As for the two 6-Tone "Missing" Scales, #l and #m, I found no connection with anything in this book for #l. However, #m is backward of the known scale, #98 (which is MS 6-X:1). The Modal Series that is the retrograde inversion to #98's Modal Series is a known Modal Series, MS 6-XI; therefore, #m is part of a known Modal Series and is MS 6-XI:5.

"MISSING" SCALES IN "MISSING" MODAL SERIES

CHART #73

MS 7-A:1	#a	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ (Bkwrđ = #j MS 7-B:1)
2	--	..... 1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
3	--	..... $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
4	--	..... 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
5	--	..... $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$
6	--	..... 1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
7	--	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
MS 7-B:1	#j	..... $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ (Bkwrđ = #a MS 7-A:1)
2	--	..... 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
3	--	..... $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
4	#g	..... 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
5	--	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
6	--	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
7	--	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 7-C:1	#e	..... $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
2	--	..... 1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
3	--	..... 1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1
4	#i	..... 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
5	--	..... $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$
6	--	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$
7	--	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
MS 7-D:1	#h	..... $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1
2	--	..... 1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$
3	--	..... 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$
4	--	..... $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
5	--	..... $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$
6	-- 1-1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$
7	-- 1- $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1

End of Chart #73

CHAPTER 23

ALTERED SCALES

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REGARDING "ALTERED" SCALES

In The Grand Finale, under most scales, the word "Altered" is used. This chapter (Chapter 23) and The Grand Finale are the only places in this book where this word is used in this manner. It may be a little confusing, so I felt that in order for you, the reader, really to get the full enjoyment (I hope) out of The Grand Finale, a full explanation of the term "Altered" as used there, was in order.

"Altered" has to do with the interrelationships between the different Tone Groups. It is referring to a scale of one Tone Group, and then taking this scale and either adding a note or so to it or else omitting a note or so from it and thereby coming up with another scale of a different Tone Group. This is best shown by example.

Let's take the 6-Tone Scale #75 Irish as our scale. It is a good one to use as an example, since it has Altered Scales in all of the other Tone Groups (except the 10-Tone Group, which is a horse of a different color).

"Normal" Scale Point Tone Numbers:	1	2	3	4	5	6	7	8
Our "eternal base" the 7-Tone Major Scale has the notes: . . .	C	D	E	F	G	A	B	c
#75 Irish has the notes:	C		E \flat	F	G	A \flat	B \flat	c

The Symbol for #75 Irish is: Major 2omit 3- 6- 7-. Its Symbol is based, of course, on the Major Scale (as are all of the other Symbols in this book -- except some of the Alternate Symbols in The Grand Finale and in Chart #13.)

Now, let's take this Irish Scale (#75) and use it as a "base" for other scales in this book instead of the Major Scale. In other words, let's alter it. All right, this "base scale", as compared with the Major Scale, has no 2nd Scale Point Tone (SPT) at all, does it? Also, its normal 3rd SPT (Scale Point Tone) (3rd SPT as related to the 7-Tone Major Scale, not the 3rd of this 6-Tone Scale) is E \flat , not E as in the Major Scale. Its normal 6th SPT (again using 6th as it would be in our "eternal base", the 7-Tone Scale) is A \flat (not just A as in the Major Scale,), and its normal 7th SPT is B \flat , not B. Therefore, the base for the altered scales at this moment is not C-D-E-F-G-A-B-c as it has been for the Major Scale. Instead, the base (though *only* while discussing Scale #75 Irish) will be C-E \flat -F-G-A \flat -B \flat -c. For now if a scale has an E \sharp instead of an E \flat , it will be shown as a *raised* 3rd Scale Point Tone (3+), won't it? After all, an E \sharp is a half step higher than an E \flat , isn't it

Now, I know that this is all confusing. But I have tried other methods of designating the various Scale Point Tones by number, and this way is the only way that I could "make sense" out of consistently. So always, remember, the Scale Point Numbers will be referring to which number it would be if our other-than-7-Tone Scale had been a 7-Tone Scale. It may take a little thinking about on your part at first, but you should have no trouble with it after a bit.

Well, with all of this in mind, let's proceed with the Altered Scales for Scale #75 Irish, as they are shown under "Altered" in The Grand Finale (which starts on page 405). Let's start with a 5-Tone alteration by taking Scale #158, Pentatonic #5.

The regular Symbol (which is based on the Major Scale) for #158 Pentatonic #5, is Major 2omit 3- 5omit 6- 7-. Let's compare it (in the key of C, to be consistent with the rest of the book) to our new base, the Irish Scale #64.

"Normal" Scale Point Tone Numbers:	1	2	3	4	5	6	7	8
#75 Irish has the notes:	C		E \flat	F	G	A \flat	B \flat	c
#158 Pentatonic #5 has the notes:	C		E \flat	F		A \flat	B \flat	c

You can see that by omitting the G (normally the 5th Scale Point Tone of a 7-Tone Scale on which this whole book is based) from Scale #75 Irish, we now have Scale #158 Pentatonic #5, haven't we? Therefore, we could give Scale #158 the Symbol of #75 Irish 5omit, couldn't we? For that reason, #158 is listed that way under Scale #75:

Altered:

5-Tone #158 Pentatonic #5 = (#75) Irish 5omit

Do you see what we are doing under "Altered" in The Grand Finale? Let's do this again with another 5-Tone Scale, #164 Pentatonic #2:

"Normal" Scale Point Tones Numbers:	1	2	3	4	5	6	7	8
#75 Irish has the notes:	C		E \flat	F	G	A \flat	B \flat	c
#164 Pentatonic #2 has the notes:	C		E \flat	F	G		B \flat	c

The "normal" 6th SPT (in a 7-Tone Scale) is omitted. You can easily see that the 5-Tone Scale #163 Pentatonic #2 is an altered scale of Scale #75 Irish, can't you. Therefore, we can give Scale #163 Pentatonic #2 the Altered Symbol:

#163 Pentatonic #2 = Irish 6omit

Now let's add some notes to Scale #75 Irish:

"Normal" Scale Point Tone Numbers:	1	2	3	4	5	6	7	8
The 6-Tone Scale #75 Irish has the notes:	C		E \flat	F	G	A \flat	B \flat	c
The 7-Tone Scale #15 Phrygian has the notes:	C	D \flat	E \flat	F	G	A \flat	B \flat	c

You can see that if we were to add a lowered "normal" 2nd Scale Point Tone to #75, then the 6-Tone Irish Scale (#75) would "turn into" the 7-Tone Phrygian Scale. It can be shown (as it is under the "Altered" part of #75 in The Grand Finale) as:

7-Tone...#15 Phrygian = Irish 2-

On the other hand, if you add just add a regular (natural) 2nd Scale Point Tone (D

instead of D \flat), you will have C-D-E \flat -F-G-A \flat -B \flat -c, which is the Natural minor Scale (#49). This is listed under Scale #75 Irish as:

7-Tone...#49 Natural minor = Irish 2

Are you beginning to see what I am doing? And the same can be done with 8-Tone and 9-Tone Scales:

"Normal Scale Point Tone Numbers:	1	2	3	4	5	6	7	8
#75 Irish (our "base") has the notes:	C		E \flat	F	G	A \flat	B \flat	c
#117 Phrygian 8-Tone #2 has the notes:	C	D \flat	E \flat	F	G	A \flat	<u>A</u>	B \flat c

You can see from the above that the #117 Phrygian 8-Tone #2 Scale not only has a 2nd Scale Point Tone (which #75 doesn't have), but this 2nd SPT is flatted when compared to the Major Scale. There was no 2nd SPT in #75 to compare this with, so we had to compare it with the Major Scales 2nd SPT. Also #117 has an "extra" 6th Scale Point Tone (when judged by our "normal" 7-Tone Scale) that #75 doesn't have. And this extra 6th SPT is $\frac{1}{2}$ tone higher than our "temporary base" #75's 6th SPT. So it is a "raised 6th", isn't it? Therefore, #117 is shown in The Grand Finale under #75 Irish as:

8-Tone...#117 Phrygian 8-Tn #2 = Irish 2- 6 6+

In the same way, let's look at the 9-Tone Scale, #138 Locrian 9-Tone.

"Normal" Scale Point Tone Numbers:	1	2	3	4	5	6	7	8
#75 Irish (our "base") has the notes:	C		E \flat	F	G	A \flat	B \flat	c
#138 Locrian 9-Tone has the notes:	C	D \flat <u>D</u>	E \flat	F	<u>G\flat</u> G	A \flat	B \flat	c

As you can easily see by looking at this, #138 has not only a "normal" 2nd Scale Point Tone (which #75 doesn't), but #138 also had a lowered 2nd SPT. Both #75 and #138 had the 5th Scale Point Tone of the Major Scale, but, in addition, #138 has also a lowered 5th SPT. So we show #138 as "altered" from #75 Irish in the following way:

9-Tone...#138 Locrian 9-Tone = Irish 2- 2 5- 5

To show all of this together, in The Grand Finale at the end of #75 Irish, you find these five scales of our example as follows:

	(#75 Irish) Altered:	
5-Tone	#158 Pentatonic #5	= Irish 5omit
	#164 Pentatonic #2	= Irish 6omit
7-Tone	#15 Phrygian	= Irish 2-
	#49 Natural minor	= Irish 2
8-Tone	#117 Phrygian 8-T #2	= Irish 2- 6 6+
9-Tone	#138 Locrian 9-Tone	= Irish 2- 2 5- 5

As a matter of interest, let me mention that this scale, #75 Irish, has under "Altered" in The Grand Finale two 5-Tone Scales, two 7-Tone Scales, seven 8-Tone Scales, and three 9-Tone Scales.

So now you (hopefully!) get the idea of "Altered" as it appears under nearly all of the scales in The Grand Finale, don't you? But, you may say, why bother with this in the first place?

Well, I bothered because it all fitted in so nicely, like a jigsaw puzzle. That was my main reason at first. These "altered" scales are put in just to show scale relationships. Just listing all of the possible altered scales also shows the interesting relationships between scales, even if you never use them to play the related scales.

But, in reality, this could actually be useful to the musician. Let's say that you were very adept at using the Irish Scale, #75 in this book; you could really play a lot of pieces in this 6-Tone Scale with ease. Then you could sometimes just drop the 5th Scale Point Tone of this Irish Scale and be playing in the 5th Mode of the Pentatonic Scale (#158). See how much easier that would be than going through: "Now, let's see, the Pentatonic #5 is a Major Scale with the 2nd and 5th Scale Point Tones omitted and the 3rd, 6th, and 7th SPT lowered." It would be so much easier just to drop a 5th SPT from the Irish Scale (#75)! So that is the other reason for putting in the "Altered" scales.

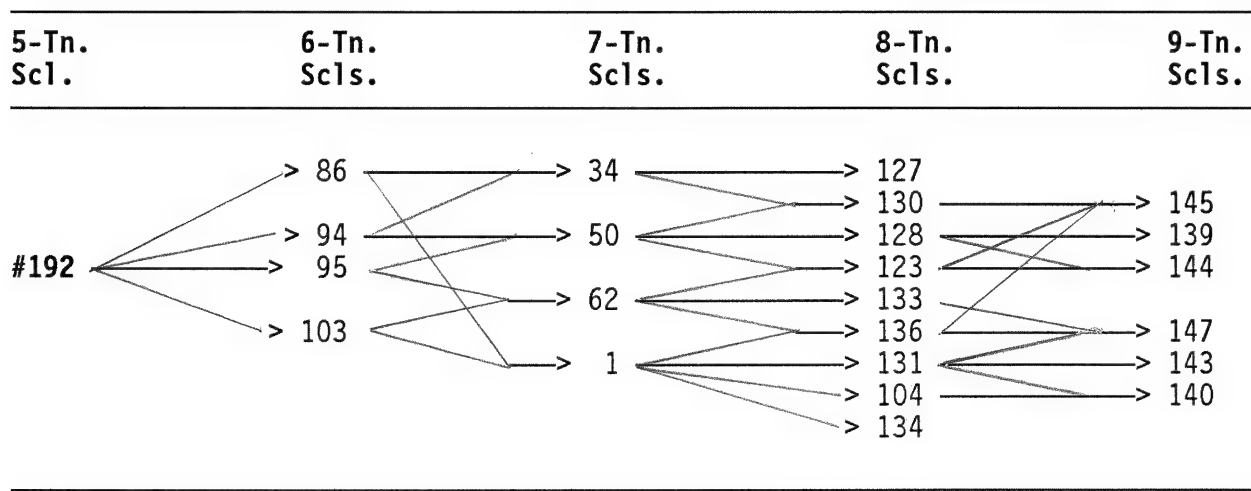
Now, as I was literally playing around with these scale relationships and alterations, I decided to draw up some diagrams with scale numbers and arrows to show how one scale can evolve into another. As I began actually putting this book together from all of my notes, I first decided to leave out my little scale number-arrow diagrams, thinking it might be "too much" for the reader. But as I wrote this part about Altered Scales, I decided to include just five of my Scale Number-arrow diagrams, one from each tone group. That would be enough not to confuse the uninterested reader (he can just skip it), but it would at least give a little pleasure to the reader who enjoys things-that-fit-together, as I do.

So here, on the next pages, are five of the most complicated Scale Number-arrow diagrams, one for each Tone Group. I used "starting scales" in these five diagrams that each includes in its diagram Scale #50, because #50 has so many "connections". I hope you enjoy them.

DISCLAIMER: There may be a few or many alterations that I have missed. I make no claim to have put all of the possible alterations in The Grand Finale. In fact, as I worked with the following charts I discovered omissions I had made which I added to The Grand Finale -- and, much worse yet, one I had put in the chart (but not The Grand Finale) that did not belong there and had to be removed. Please make allowances for the possibility of human errors on my part.

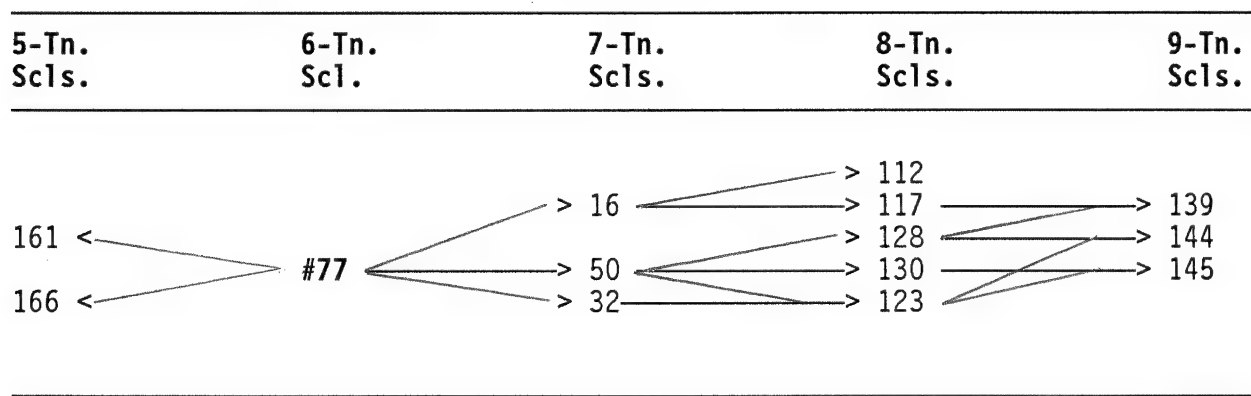
HOW ONE 5-TONE SCALE MAKES OTHER SCALES BY ADDING TONES

CHART #74



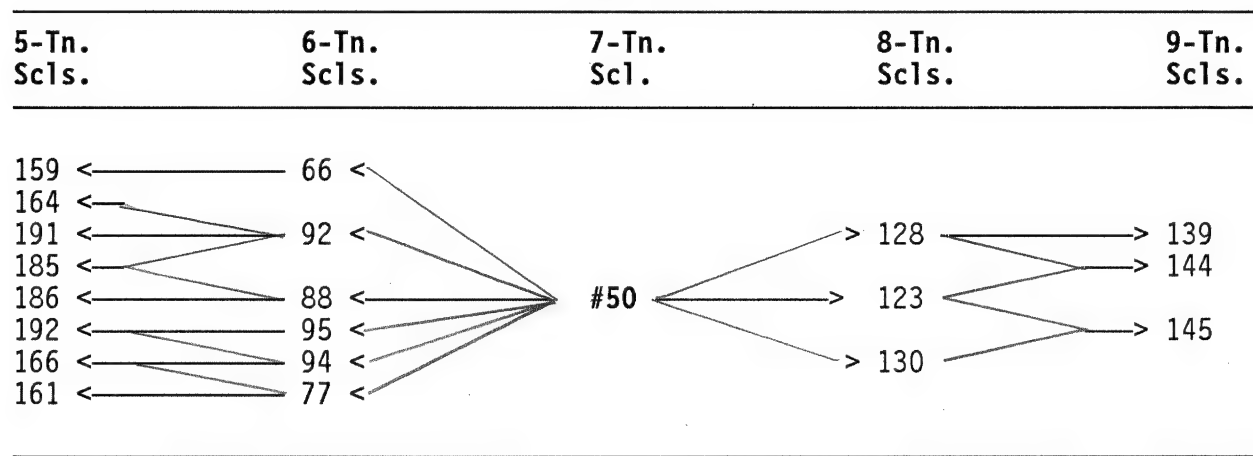
HOW ONE 6-TONE SCALE MAKES OTHER SCALES BY ADDING & OMITTING TONES

CHART #75



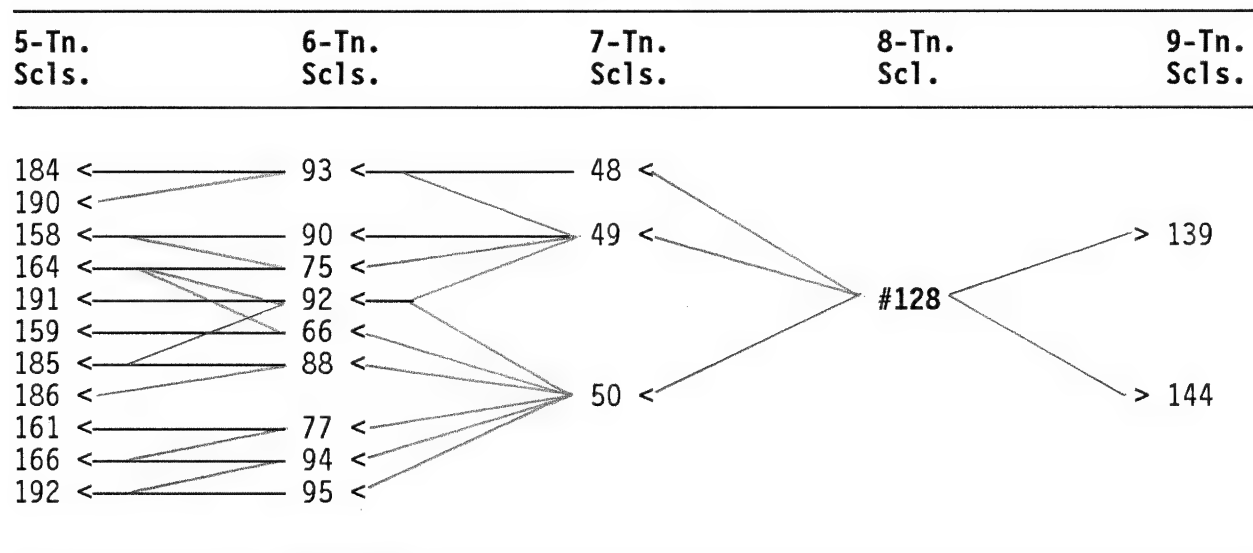
HOW ONE 7-TONE SCALE MAKES OTHER SCALES BY ADDING & OMITTING TONES

CHART #76



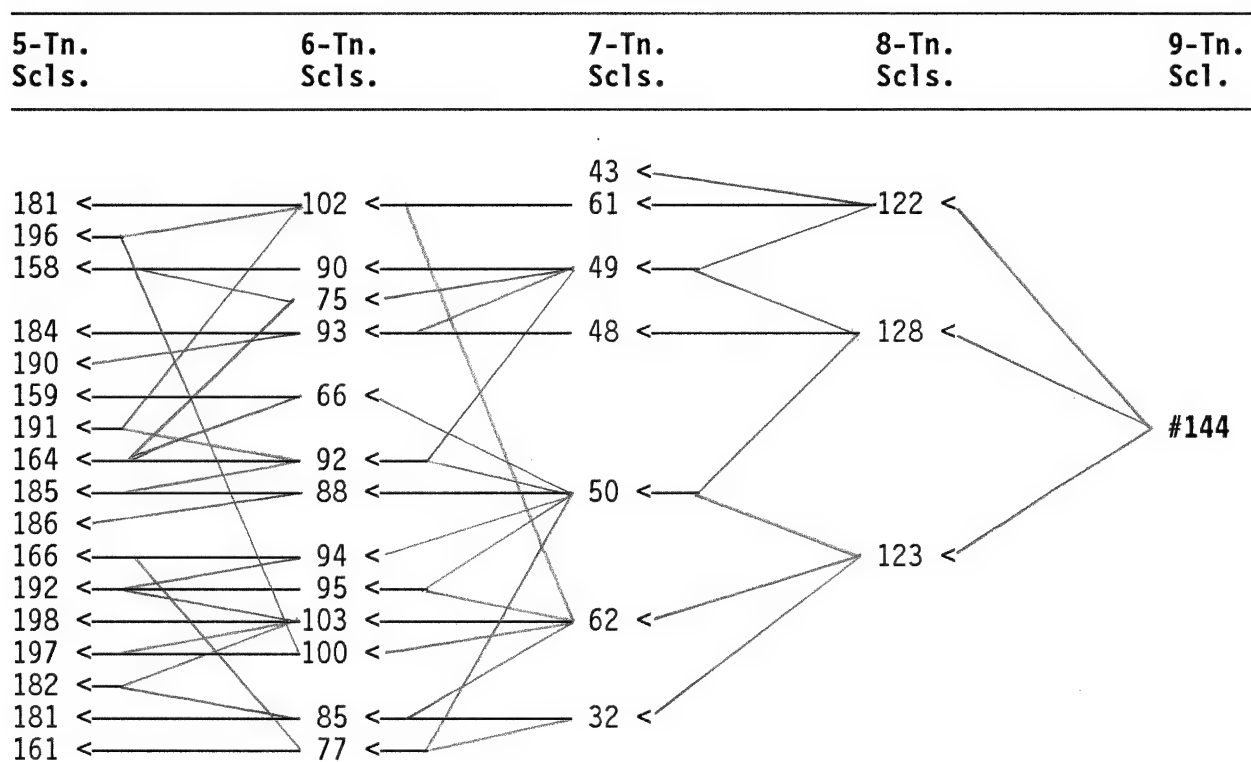
HOW ONE 8-TONE SCALE MAKES OTHER SCALES BY ADDING & OMITTING TONES

CHART #77



HOW ONE 9-TONE SCALE MAKES OTHER SCALES BY OMITTING TONES

CHART #78



SCALE INTERRELATIONSHIPS

You can see from the previous few pages that a particular scale of one tone group often has a relationship with scales of other tone groups. But I was surprised just how many of the scales did have these relationships with others.

1. There are 198 scales in this book.
2. Out of these 198 scales, there are -10 that are Combination Scales leaving 188 scales.
3. Then, there are -8 scales more than an octave, leaving 180 scales.
4. Now, out of these 180 scales, only -7 scales *don't* have some sort of relationship with another scale that is in a different Tone Group!
5. Which leave us a total of 173 scales that *have* some sort of relationship with at least one other scale of another Tone Group!

Chart #79, below, shows the 7 scales that do not have any relationship with any other scale in this book. Don't forget that the Scale Numbers can be used for finding out more about an individual scale in The Grand Finale, which starts on page 405.

SCALES NOT RELATED TO ANY OTHER SCALE IN THIS BOOK

CHART #79

6-Tone Scales	*#80	Augmented	Major 2+ 4omit 6-
	*#82	6-Tone Symmetrical	Major 2- 5+ 7omit
7-Tone Scales	#3	Chromatic Mixolydian	Major 2- 2 3+ 4+ 6+ 7omit
	#9	Chromatic Hypophrygian	Major 2+ 3+ 4+ 6+
	*#24	Enigmatic, Desc.-Inv.	Major 2- 5+ 6+
8-Tone Scales	#108	Portuguese	Major 2 2+ 4+ 8+
	#125	Diminished #1	Major 3- 5- 6- 6

*non-ethnic (synthetic) scales

End of Chart #79

INTERRELATIONSHIPS TO OTHER SCALES -- ETHNIC VS. NON-ETHNIC SCALES

As I've mentioned before, my two main scale-interests are 7-Tone Scales and Ethnic Scales. Let's take a look at Ethnic Scales that do *not* have relationships with other tone groups versus Non-ethnic Scales that don't have relationships with other Tone Groups.

- | | | |
|---|------------|-----------------------|
| 1. Again, there are | 198 | scales in this book |
| 2. out of which there are | <u>-18</u> | Comb. Scs. & Octave + |
| leaving | 180 | scales. |
| 3. Out of these 180 scales, there are | <u>-31</u> | non-ethnic scales |
| 4. as opposed to | 149 | ethnic scales |

Now, looking again at Chart #79 (above) you will notice 3 non-ethnic (synthetic) scales. This shows that out of 31 non-ethnic scales, 3 are not related to any other scale in this book, while out of 149 ethnic scales, only 4 are non-related. Do you see what I'm driving at? A synthetic scale is 4 times as likely not to be related to any other scale in another tone group as an ethnic scale is.

Of course, we might wonder if this has anything to do with the fact that ethnic scales are scales used by peoples in their everyday music. These everyday scales may drop or add notes as time goes by, according to many. But the synthetic scales are just intervals that people put together when they were trying to make a "different" sounding piece of music. I'm not saying that this is true or that it has anything to do with the great difference between the two groups as noted in the previous paragraph.

So what do I do with this? Absolutely nothing -- I just find it interesting!

Now let's turn the page and look at another aspect of this.

7-TONE SCALES & RELATED SCALES

Now to my other "main interest" and another angle on relationships between tone groups.

1. There are 198 scales in this book
2. of which -10 are Combination Scales
leaving 188 Scales.
3. Of these 188 scales -57 are non-combination 7-Tone Scales,
giving us 131 5-, 6- 8-, 9-, & 10-Tn Scs.
4. Out of these 131 scales, only -5 scales are not related to any 7-Tone
Scale (see Chart #80, just below).
5. So we see that 126 scales can be formed by either adding to
or omitting 1 or 2 tones from at least
one 7-Tone Scale. This averages 2 1/5
scales per 7-Tone Scale.
6. However, actually -85 (67%) of these non-7-Tone Scales can
be formed from just making omissions
or additions to the 7 Diatonic Modes!
(see Chapter 26, page 364)
7. This leaves us 41 non-7-Tone Scales to be spread out
among the other 51 7-Tone Scales. In
reality, though, 19 7-Tone Scales can be
used to form these 41 scales.

SCALES NOT RELATED TO ANY 7-TONE SCALE IN THIS BOOK

CHART #80

6-Tone Scales	*#80	Augmented	Major 2+ 4omit 6-
	*#82	6-Tone Symmetrical	Major 2- 5+ 7omit
8-Tone Scales	*#108	Portuguese	Major 2 2+ 4+ 8+
	#115	Zirafkand	Major 2- 3- 5- 6- 6
	*#125	Diminished #1 ...	Major 3- 5- 6- 6

*These are not related to any scale in any tone group at all;
see Chart #79, 3 pages previously.

End of Chart #80

AN EXPLANATION OF THE FOLLOWING CHARTS, #81 - #85

On the following pages are charts showing the alterations of each scale by Tone Groups. The scales are listed numerically within their Tone Groups, and then beside them are the scales into which they can be changed by omitting or adding tones.

REMEMBER: The scale numbers can be used to look up the individual scales in The Grand Finale (which starts on page 405) in order to get lots of fascinating information about the individual scales!

DISCLAIMER: Remember that I make no claims to infallibility. If I have missed some alterations, add them to your own copy.

5-TONE SCALES & THEIR ALTERED SCALES

CHART #81

5-Tone	6-Tone	7-Tone	8-Tone	9-Tone
#153 Semi. P.#4	. 67, 68	8, 10, 12	105, 110, 114, 116 . .	138
#154 Japanese	. . 68	8, 12, 42, 45	105, 110, 114, 116 . .	138
#155 Pelog #1	. . ---	10, 11, 14, 15	106, 111, 114, 117 . .	137, 138, 139
#156 Pelog #4	. . 71	12, 26, 27	105, 110, 114, 116, 120	138
#157 Hiraj. #2	. . 71	12, 13, 27, 38	105, 110, 114, 116 . .	138
#158 Pent. #5	. . 72, 75, 90 . .	12, 15, 25, 29, 45, 49	105, 106, 110, 111, 114, 116, 117, 122, 128, 129, 135	138, 139, 144
#159 Kumoi #5	. . 66	12, 13, 45, 46	105, 110, 114, 116 . .	138
#160 Javanese	. . 70, 72, 74 . .	12, 14, 15	105, 106, 110, 111, 114, 115, 116, 117	138, 139
#161 Semi. P.#1	. 77	13, 16, 29, 32, 46, 50	112, 117, 123, 128, 130	139, 144, 145, 146
#162 Hiraj. #4	. . 73, 74, 83 . .	4, 14, 15, 30, 31	106, 111, 114, 117 . .	137, 138, 139
#163 Kumoi #2	. . 73, 84	15, 16, 31, 33	106, 111, 112, 114, 117	138, 139
#164 Pent. #2	. . 66, 75, 92 . .	15, 16, 32, 49, 50	106, 111, 112, 114, 117, 122, 123, 128, 129, 130, 135	138, 139, 144, 145, 146
#165 Japan. P.#4	. 76	2, 6, 16, 33	112, 117	137, 139
#166 Jazz min Pnt.	76, 77, 94 . . .	6, 16, 34, 50	112, 117, 123, 128, 130	139, 142, 143
#167 Kumoi #3	. . ---	17, 23, 51, 52	107, 118, 120, 131, 132	140, 141, 147
#168 Japan. P.#5	. ---	19, 20, 26, 52, 53	120, 132	141
#169 Dim.Pent.	. . ---	18, 22	121	142
#170 Jz. Dom. Pnt.	79	21, 28	109, 110	---
#171 Japan. P. #3	---	8, 11, 25, 29, 43	113, 122	144
#172 Vibhasa	. . . 78, 79 . . .	17, 21, 28	107, 118, 120	141
#173 Hira. #5	. . ---	17, 20, 51	107, 131, 132	140, 141, 147
#174 Pent-Dom	. . ---	18, 22, 32, 43	109, 112, 121, 122, 123	142, 144, 145
#175 Rewa	. . . 81, 83 . . .	20, 30, 31	---	141
#176 Dom Pent	. . 84	21, 31, 33	109, 111, 112	---
#177 Scriabin	. . ---	2, 17, 21 33	109, 112	---
#178 Hiraj. #3	. . ---	1, 2, 23, 56	104, 118, 120, 131, 136	140, 143, 145, 147
#179 Pelog #3	. . 85	28, 29, 32, 33, 58, 59, 62	112, 123, 133, 136 . .	144, 145, 147, 149
#180 Pelog #5	. . ---	1, 2, 30, 60	104, 131, 136	137, 140, 143, 145, 147
#181 Semi. P.#3	. 84, 85, 102 . .	31, 32, 33, 61 62 . .	111, 112, 122, 123, 133, 136	144, 145, 147, 149

(cont'd)

Chart #81: 5-Tone Scales & Their Altered Scales (cont'd)

5-Tone	6-Tone	7-Tone	8-Tone	9-Tone
#182 Bulgarian . .	85, 103 . .	1, 2, 32, 33, 62	. 104, 112, 123, 131, 133, 136	. . 140, 143, 144, 145, 147, 149
#183 Pelog #2 . .	---	37, 38, 40, 51	. . 107, 131, 132 . . . .	. . 140, 141, 147
#184 Hiraj. #1 . .	93	40, 41, 42, 43, 47, 48, 49	. 106, 122, 127, 128, 129, 135	. . 138, 139, 144
#185 African . . .	88, 92 . . .	42, 43, 44, 49, 50	. 106, 122, 123, 128, 129, 130, 135	. . 138, 139, 142, 144, 145, 146
#186 Kumoi #1 . .	88	34, 37, 44, 50	. . 121, 123, 127, 128, 130	. . 139, 142, 144, 145, 146
#187 Semi. P.#2 .	89	37, 44, 51, 55	. . 107, 121, 131, 132, 133	. . 140, 141, 147
#188 Japan. P.#2 .	. . . . .	45, 46, 57, 58	. . 105, 133 . . . . .	. . 138, 147
#189 Semi. P.#5 .	86, 91 . . .	1, 34, 47, 60	. . 104, 127, 129, 130, 131, 136	. . 140, 143, 145, 147
#190 Kumoi #4 . .	91, 93 . . .	47, 48, 49, 60, 61	. 106, 122, 127, 128, 129, 135	. . 138, 139, 144
#191 Pent. #4 . .	92, 95, 102 . .	49, 50, 61, 62	. . 106, 122, 123, 128, 129, 130, 133, 135, 136	. . 138, 139, 144, 145, 146, 147, 149
#192 Pent. #1 . .	86, 94, 95 103 . .	1, 34, 50, 62,	. 104, 123, 127, 128, 130, 131, 133, 136	. . 139, 140, 143, 144, 145, 146, 147, 149
#193 Jazz Pt. . .	98	54, 55, 57, 58	. . 133 . . . . .	. . 147
#194 India	96	1, 51, 60	. . . . 131, 132, 134, 136 . .	. . 143, 147
#195 Japan. P.#1 .	---	54, 60, 61	. . . . 122 . . . . .	. . 144
#196 African . . .	100, 102 . .	54, 55, 61, 62	. . 136 . . . . .	. . 147
#197 Pent. #3 . .	96, 99, 100, 103 . .	1, 51, 55, 62	. . 104, 107, 121, 123, . .	. . 140, 141, 131, 132, 133, 136, 143, 144, 145, 147, 149
#198 African . . .	103	1, 56, 58, 59, 62	. 104, 123, 131, 133, 136	. . 140, 142, 143, 147

End of Chart #81

NOTE: Remember, for more information all scales may be looked up by their Scale Number in The Grand Finale, which starts on page 629 for 5-Tone Scales

6-TONE SCALES & THEIR ALTERED SCALES

CHART #82

6-Tone	5-Tone	7-Tone	8-Tone	9-Tone
*#64 Appalachian . COMBINATION SCALE				
#65 African	---	6, 34	130	143, 145
#66 Blues	159, 164	18, 44, 50	---	142
#67 Vilasakhani	153	10	115, 116	---
#68 Locrian 6-Tn	153, 154	8, 12	105, 110, 113, 114, 116	138
#69 Hidshaf	---	13	---	---
#70 Gurjari	160	14	115, 116	---
#71 Abuselik	156, 157	12, 27	105, 110, 114, 116	138
#72 Phrygian 6-Tn	158, 160	12, 15	105, 106, 110, 111	138, 139
			114, 117	
#73 In Scale	162, 163	15, 31	106, 111, 114, 117	138, 139
#74 Samanta	160, 162	14, 15	111, 117	138, 139
#75 Irish	158, 164	15, 49	106, 111, 114, 117	138, 139
			122, 128, 129	144
#76 African	165, 166	6, 16	112, 117	
#77 Dorian 6-Tn	161, 166	16, 32, 50	112, 117, 123, 128	139, 144,
			130	145, 146
#78 Panchana	172	17, 23	107, 118, 120	140, 141
#79 Prometh.-Neap.	170, 172	21, 28	109	---
#80 Augmented	---	---	---	---
#81 Comb.-Alt.	175	20	---	141
#82 6-Tn Symmet.	---	---	---	---
#83 Bangala	162, 175	30, 31	111	---
#84 Greek	163, 176,	31, 33	111, 112	---
	181			
#85 Polish	181, 182	32, 33, 62	112, 123, 133, 136	144, 145,
				147, 149
#86 Ionian 6-Tn.	189, 192	1, 34	104, 127, 130, 131,	140, 143,
			136	145, 147
#87 Appalachian . COMBINATION SCALE				
#88 Akebono	185, 186	44, 50	121, 123, 128, 130	139, 142,
				144, 145,
				146
#89 Overtone 6-Tn	187	44, 55	121, 133	142, 147
#90 Aeolian 6-Tn	158	45, 49	105, 106, 122, 128,	138, 139,
			129, 135	144
#91 Armenian	189, 190	47, 62	127, 129	---
#92 Greek	164, 185,	49, 50	106, 122, 123, 128,	138, 139
	191		129, 130, 135	144
#93 Glinka's	184, 190	47, 49, 49	106, 122, 127, 128,	138, 139,
			129, 135	144
#94 Hungarian	166, 192	34, 50	123, 127, 128, 130	139, 144,
				145, 146

*Use Numbers to locate Scales in The Grand Finale,
which starts on page 491 for 6-Tone Scales

(cont'd)

Chart #82: 6-Tone & Their Altered Scales (cont'd)

6-Tone	5-Tone	7-Tone	8-Tone	9-Tone
#95 Appalachian . . .	192	50, 62	123, 128, 130, 136 . . .	139, 144, 145, 146, 149
#96 Scotch . . .	194, 197 . .	1, 51	104, 107, 131, 132, 136	140, 141, 143, 145, 147
#97 Whole Tn. . .	---	53, 54, 57	---	---
#98 Prometheus . .	193	55, 58	133	147
#99 Lydian 6-Tn . .	197	51, 55	107, 121, 131, 132, 133	140, 141, 147
#100 Scotch . . .	196, 197 . .	55, 62	133, 136	147
#101 Appalachian .	COMBINATION SCALE			
#102 Mixolyd. 6-Tn	181, 191 . .	61, 62	122, 123, 133, 136 . . .	144, 145, 147, 149
#103 Guido's . . .	182, 192, 197, 198 . .	1, 62	104, 123, 131, 133, 136	140, 143, 145, 147, 149

End of Chart #82

7-TONE SCALES & THEIR ALTERED SCALES

CHART #83

7-Tone	5-Tone	6-Tone	8-Tone	9-Tone
*#1 Major . . .	178, 180, 182, 189, 192, 194, 197, 198	86, 96, 103 . .	104, 131, 134, 136,	140, 143, 145, 147
#2 Ananda . .	165, 177, 178, 180, 182	---	104	140
#3 Chr.Mixo. .	---	---	---	---
#4 Chr.Dor. .	162	---	---	---
#5 Jewish . .	COMBINATION SCALE			
#6 Neap.-Maj.	165, 166	65, 76	---	137
#7 Polish . .	COMBINATION SCALE			
#8 Super-Loc.	153, 154, 171 . . .	68	110, 113	---
#9 Ch.Hypopg.	---	---	---	---
#10 Raga Todi .	153, 155	67	---	---
#11 Byzantine .	155, 171	---	111, 113	---
#12 Locrian . .	153, 154, 156, 157, 158, 159, 160	68, 71, 72 . . .	105, 110, 114, 116	138
#13 Hijazi . .	157, 159, 161 . . .	69	---	---
#14 Neap-min. .	155, 160, 162 . . .	70, 74	---	137
#15 Phrygian .	155, 158, 160, 162 . 163, 164	72, 73, 74, 75 .	106, 111, 114, 117	138, 139
#16 Javanese .	161, 163, 164, 165, 166	76, 77	112, 117	139
#17 Marava . .	167, 172, 173, 177 .	78	107, 118, 119 . . .	140, 141
#18 Blues . . .	159, 169, 174 . . .	66	---	---
#19 Enigmatic .	168	---	---	---
#20 Ch.Hypolyd.	168, 173, 175 . . .	81	---	141
#21 India . . .	170, 172, 176, 177 .	79	109	---
#22 Hung.-Maj.	169, 174	---	109	142
#23 Ch.Lydian .	178	78	118, 120	140
#24 Enig.Des. .	---	---	---	---
#25 Ch.Phyrg. .	158, 171	---	---	---
#26 Persian . .	156	---	120	---
#27 Rahawi . .	156, 157	71	110	---
#28 Oriental . .	157, 170, 172, 179 .	79	---	---
#29 Persian . .	158, 161, 171, 179 .	---	---	---
#30 Dbl.Harm. .	162, 175, 180 . . .	83	---	137
#31 Spanish . .	162, 163, 175, 176 . 181	73, 83, 84 . . .	111	---
#32 Roum.-Maj.	161, 164, 174, 179, 181, 182	77, 85	123	142, 145
#33 Arabic . . .	163, 165, 176, 177, 179, 181, 182	84, 85,	112	---
#34 Melod.-min	166, 186, 189, 192 .	65, 86, 94 . . .	127, 130	143, 145
#35 Arezzo . . .	COMBINATION SCALE			
#36 Basque . . .	COMBINATION SCALE			

*Use Numbers to locate Scales in The Grand Finale,
which starts on page 405 for 7-Tone Scales

(cont'd)

Chart #83: 7-Tone Scales & Their Altered Scales (cont'd)

7-Tone	5-Tone	6-Tone	8-Tone	9-Tone
#37 Lyd.-Dim. .	183, 186, 187 . . .	---	---	---
#38 Conway's .	---	---	124	143
#39 Turkish . .	COMBINATION SCALE			
#40 Hung.-min .	183, 184	---	---	---
#41 Ch.Hypodor. .	184	---	---	---
#42 Greek . . .	154, 184, 185 . . .	---	---	138
#43 Greek . . .	171, 174, 184, 185 .	---	122	144
#44 Roum.-min .	185, 186, 187 . . .	66, 88, 89 . .	121	142
#45 Half-Dim. .	154, 158, 159, 188 .	90	105, 126	138
#46 Zangula . .	159, 161, 188 . . .	---	126	142
#47 Harm.-min. .	184, 189, 190 . . .	91, 93	127, 129	---
#48 Ptolemy's .	184, 190	93	127, 128	---
#49 Nat.minor .	158, 164, 184, 185, 190, 191	75, 90, 92, 93	106, 122, 128, 129 . 135	138, 139, 144, 148
#50 Dorian . .	161, 164, 166, 185, 186, 191, 192	66, 77, 88, 92, 94, 95	123, 128, 130 . . .	139, 142, 144, 145, 146
#51 Lydian . .	167, 173, 183, 187 . 194, 197	96, 99	107, 131, 132 . . .	140, 141, 147
#52 Lyd.-Aug. .	167, 168	---	132	141
#53 Ld.Whl.Tn. .	168	97	---	---
#54 Lyd.-min. .	193, 195, 196 . . .	97	---	---
#55 Overtone .	187, 193, 196, 197 .	89, 98, 99, 100	121, 133	142, 147
#56 Ionian-Aug. .	178, 198	---	134	---
#57 Locrn.-Maj. .	188, 193	97	---	---
#58 Zenkla . .	179, 188, 193, 198 .	98	133	142, 147
#59 Ruml.-Meia .	179, 198	---	---	144
#60 Harm.-Major .	180, 189, 190, 194, 195	91	134	---
#61 Hindustan .	181, 190, 191, 195, 196	102	122	144
#62 Mixolydian .	179, 181, 182, 191, 192, 196, 197, 198	85, 95, 100, . 102, 103	123, 133, 136 . . .	142, 144, 147, 149
#63 Spiritual .	COMBINATION SCALE			

End of Chart #83

NOTE: Use Scale Numbers to look for more information on each scale in The Grand Finale, starting on page 405 for 7-Tone Scales.

8-TONE SCALES & THEIR ALTERED SCALES

CHART #84

8-Tone	5-Tone	6-Tone	7-Tone	9-Tone
#104 Hindu . . .	178, 180, 182, 189, 192, 197, 198	. . . 86, 96, 103	1, 2	140
#105 Loc.8-#1 .	153, 154, 156, 157, 158, 159, 160, 188	. . . 68, 71, 72, 90	12, 45	138
#106 Phg 8-#1 .	155, 158, 160, 162, 163, 164, 184, 185, 190, 191	. . . 72, 73, 75, 90, . . . 92, 93	15, 49	138, 139
#107 Hindu . . .	167, 172, 173, 183, 187, 197	. . . 78, 96, 99	17, 51	140, 141
#108 Portuguese	---	---	---	---
#109 Dimin.#2 .	170, 174, 176 . . . . .	. . . 79	21, 22	---
#110 Espla's . .	153, 154, 156, 157, 158, 159, 160, 170	. . . 68, 71, 72	8, 12, 27	---
#111 Span.8-Tn .	155, 158, 160, 162, 163, 164, 176, 181	. . . 72, 73, 74, 75, . . . 83, 84	11, 15, 31	---
#112 Latin Am. .	161, 163, 164, 165, 166, 174, 176, 177, 179, 181, 182	. . . 76, 77, 84, 85	16, 33	---
#113 Compos.#1 .	171 . . . . .	. . . 68	8, 11	---
#114 Loc.8-#2 .	153, 154, 155, 156, 157, 158, 159, 160, 162, 163, 164	. . . 68, 71, 72, 73, . . . 75	12, 15	138
#115 Zirafkand .	160 . . . . .	. . . 67, 70	---	---
#116 'Iraq . . .	153, 154, 156, 157, 158, 160, 162	. . . 67, 68, 70, 71	12	---
#117 Phg.8-#2 .	155, 158, 160, 161, 162, 163, 164, 165, 166	. . . 72, 73, 74, 75, . . . 76, 77	15, 16	140
#118 Buzurg . .	172, 178 . . . . .	. . . 78	17, 23	140
#119 Bagpipe tng.	MORE THAN AN OCTAVE			
#120 Irak . . .	156, 172, 178 . . . . .	. . . 78	23, 26	---
#121 Jobim's . .	169, 174, 184, 186, 197	. . . 88, 89, 99	44, 55	---
#122 Aeo.8-#1 .	158, 164, 171, 174, 181, 184, 185, 190, 191, 195	. . . 75, 90, 92, 93, . . . 102	43, 49, 61	144
#123 Dor.8-#1 .	161, 164, 166, 174, 179, 181, 182, 185, 186, 191, 192, 194, 198	. . . 77, 85, 88, 92, 94, 95, 100, 102, 103	32, 50, 62	144, 145
#124 Conway's .	COMBINATION SCALE			
#125 Dimin.#1 .	---	---	---	---
#126 Compos.#2 .	---	---	45, 46	---
#127 Arabic . .	184, 186, 189, 190, 192	. . . 86, 91, 93, 94	34, 47, 48	---

(cont'd)

Chart #84: 8-Tone Scales & Their Altered Scales (cont'd)

8-Tone	5-Tone	6-Tone	7-Tone	9-Tone
#128 Aeol.8-#2 .	158, 161, 164, 166, . . 184, 185, 186, 190, 191, 192	75, 77, 88, 90, . . 92, 93, 94, 95	48, 49, 50 . .	139, 144
#129 Isfahan . .	158, 164, 184, 185, . . 189, 190, 191	75, 90, 91, 92, . . 93	47, 49	---
#130 Dor.8-#2 .	161, 164, 166, 185, . . 186, 189, 191, 192	65, 77, 86, 88, . . 92, 94, 95	34, 50	145
#131 Ryo 8-Tn .	167, 173, 178, 180, . . 182, 183, 187, 189, 192, 194, 197, 198	86, 96, 99, 103 . .	1, 51	140, 143, 147
#132 Hindu . . .	167, 168, 173, 183, . . 187, 194	96, 99	51, 52	141
#133 Hindu . . .	179, 181, 182, 187, . . 188, 191, 192, 193, 197, 198	85, 89, 95, 98, . . 99, 100, 102, 103	55, 58, 62 . .	147
#134 Bop . . .	194	---	1, 56, 60 . .	---
#135 Magon Abot	MORE THAN AN OCTAVE			
#136 Mixo.8-tn .	178, 179, 180, 181, . . 182, 189, 191, 192, 194, 196, 197, 198	85, 86, 95, 96, . . 100, 102, 103	1, 62	145, 147

End of Chart #84

NOTE: Use the Scale Numbers to look of more information on each scale
in The Grand Finale, which starts on page 545 for 8-Tone Scales.

9-TONE SCALES & THEIR ALTERED SCALES

CHART #85

9-Tone	5-Tone	6-Tone	7-Tone	8-Tone
#137 Tcherep.	155, 162, 165	---	6, 14, 30	---
#138 Locrn. 9-Tn	153, 154, 155, 156, . 157, 158, 159, 160, 162, 163, 164, 184, 185, 188, 190, 191	68, 71, 72, 73, . 74, 75, 90, 92, 93	12, 15, 42, 45, 49	105, 106, 114
#139 Phrgn. 9-Tn	155, 158, 160, 161, . 162, 163, 164, 165, 166, 184, 185, 186, 190, 191, 192	72, 73, 74, 75 . . 77, 86, 88, 90, 92, 93, 94, 95	15, 16, 49, 50 .	106, 117, 128
#140 Hindu . .	167, 173, 178, 180, . 182, 183, 187, 189, 192, 197, 198	78, 86, 96, 99, . 103	1, 2, 17, 23, 51	104, 107, 118, 131
#141 Hindu . .	167, 168, 172, 174, . 175, 183, 187, 195, 197	78, 81, 96, 99 . .	17, 20, 51, 52 .	107
#142 Aux.Blues	166, 169, 174, 185, . 186, 198	66, 88, 89	22, 32, 44, 46, 50, 55, 58, 62	---
#143 Bartok's	166, 178, 180, 182, . 189, 192, 194, 197, 198	65, 86, 96, 103 .	1, 34, 38	---
#144 Aeol.9-Tn	158, 161, 164, 171, . 174, 179, 181, 182, 184, 185, 186, 190, 191, 192, 195, 197	75, 77, 85, 88, . 90, 92, 93, 94, 95, 100, 102, 103	43, 49, 50, 59 . 61, 62	122, 123, 128
#145 Dor. 9-Tn	161, 169, 174, 178, . 179, 180, 181, 182, 185, 186, 189, 191, 192, 197	65, 77, 85, 86, . 88, 92, 94, 95, 96, 100, 102, 103	1, 32, 34, 50, 62	123, 130, 136
#146 Armenian	MORE THAN AN OCTAVE			
#147 Ryo 9-Tn	167, 173, 178, 179, . 180, 181, 182, 183, 187, 188, 189, 191, 192, 193, 194, 196, 197, 198	85, 86, 89, 95, . 96, 98, 99, 100, 102, 103	1, 51, 55, 58, 62	131, 133, 136
#148 Tudor . .	MORE THAN AN OCTAVE			
#149 Adonai Malkh	MORE THAN AN OCTAVE			

End of Chart #85

NOTE: Use Scale Numbers to look up more information on each scale
in The Grand Finale, which starts on page 599 for 9-Tone Scales.

IN SUMMARY CONCERNING SCALE INTERRELATIONSHIPS

So, let's make a quick summary of what these charts tell us:

Out of 198 Scales in this book	198
not counting Combination Scales	<u>-10</u>
we are left with	188
Then not counting those More-than-an-Octave (except #108, being 6½ steps)	<u>-8</u>
leaving	180
Of these 180 scales, there are only	<u>-7</u>
that <i>don't</i> have some sort of relationship to at least	
one other scale in this book, leaving	173
scales that are interrelated to (an)other scale(s)	
of a different Tone Group.	

In other words: Out of the scales in this book not counting Combination scales & scales more than an octave, 96% are related to at least one other scale in a different Tone Group in this book! -- And almost half of the 7 unrelated scales (3 of them) are synthetic (non-ethnic) scales, ones someone "made up".

I find all of this a lot more than "chance". It shows me that various scales *have* evolved and "de-evolved" forming many others of other tone groups.

LEARN 17 SCALES AND HAVE ACCESS TO 112 MORE SCALES!

As I have repeatedly mentioned, I much prefer the 7-Tone Scales. In looking at my 7-Tone Scales, I saw that if a person were to learn well only 17 7-Tone Scales (including our Major and Natural minor Scales), then he could, by omitting or adding 1 or 2 tones be able to play 112 more scales of non-7-Tone groups, giving himself a total of 129 scales with which he could work. These "new" scales would not be Combination Scales nor more than an octave. However, they would include *all* of the 5-Tone Scales, all but 5 of the non-Combinations 6-Tone Scales, all but 7 of the non-Combination 8-Tone Scales (not over an octave), and all of the 9-Tone Scales (not over an octave) in this book.

On the next page is a chart listing which 7-Tone Scales one would need to learn to accomplish this. But let me emphasize that I am only listing each "new" scale *once*. Some of them could be formed from several of the 7-Tone Scales, but I'm hopefully avoiding confusion and giving the serious musician something to work with. So remember that the scales listed under the 7-Tone Scales are *not* the only scales that can be formed from them. Again, I'm trying to make something workable, rather than just an oddity.

**17 7-TONE SCALES
THAT WILL FORM 112 MORE (NON-7-TONE) SCALES!**

CHART #86

7-Tone	5-Tone	6-Tone	8-Tone	9-Tone
THE DIATONIC MODES:				
*#1 Major . . . (Ionian)	178, 180, 182, 189, 192, 194, 197, 198	. . 86, 96, 103 . . .	104, 131, 134, . . 136	140, 143, 145, 147
#50 Dorian . .	161, 164, 166, . . . 185, 186	77, 88, 92, . . . 94	123, 130,	142
#15 Phrygian .	155, 160, 162 . . . 163	72, 73, 74, . . . 75	106, 111, 117 . .	---
#51 Lydian . .	167, 173, 183, . . . 187	99	107, 132, 141 . .	141
#62 Mixolydian	179, 181, 191, . . . 196	85, 95, 100, . . 102	133	---
#49 Nat. minor (Aeolian)	158, 184, 190 . . .	90, 93,	122, 129, 128, . .	138, 139, 144
#12 Locrrian .	153, 154, 156, . . . 157, 159	68, 71	105, 110, 114, . .	---
NON-DIATONIC SCALES:				
#55 Overtone .	193	89, 98	121	---
#6 Neap.-Maj.	165	65, 76	--	137
#31 Spanish . .	175, 176	83, 84	---	---
#23 Chm.Lydian	---	78	118, 120	---
#21 India . . .	170, 172, 177 . . .	79	109	---
#8 Super-Loc.	171	---	113	---
#18 Blues . . .	169, 174	66	---	---
#20 Ch.Hypolyd.	168	81	---	---
#57 Loc.-Maj. .	188	97	---	---
#60 Harm.-Maj.	195	91	---	---

*Use Numbers to locate Scales in The Grand Finale,
which starts on page 405 for 7-Tone Scales.

End of Chart #86

SECTION F

THE DIATONIC MODES & THEIR RELATED SCALES

CONTENTS OF SECTION F:

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CHAPTER 24

BACKGROUND ON THE DIATONIC SCALES

CONTENTS OF CHAPTER 24:

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The Diatonic Modes -- Were They Ever "Led"?	353

THE DIATONIC MODES -- WHAT ARE THEY AND WHY ARE THEY IMPORTANT?

The Diatonic Modes (or scales) are seven different, specific, related 7-Tone Scales, six of which are commonly found in old Christian music and in many old folk songs, especially those of Europe and Great Britain. In fact, two of the Diatonic Modes, the Ionian and the Aeolian, have survived to this day as our own Major Scale and Natural minor Scale, respectively.

The Diatonic Modes, not including the Major and Natural minor Scales, have been used by such great composers as Beethoven, Chopin, Ravel, and Debussy. Increasingly, the Diatonic Modes are also appearing in "modern" music, including such artists as the Mannheim Steamrollers, Carlos Santana, Chick Corea, and Steve Vai. The Diatonic Modes are also called the "Ecclesiastical Modes" or "Church Modes".

Our Diatonic Modes were derived from the ancient Greeks. There are differences, however -- mainly because, through error, we played the intervals ascending, while the ancient Greeks played them descending! For more about the ancient Greek Diatonic Modes and the names they used, see the next chapter.

The Diatonic Modes are very important, especially for the student of ethnic music, for seven reasons:

1. Two of the Diatonic Modes are our own Major and Natural minor Scales.
2. In Section D, the Ethnic Section of this book, the six most commonly found Ethnic Scales are all Diatonic Modes. The 11th most commonly found Ethnic Scale is the 7th Diatonic Mode.
3. In the Ethnic Section there are 87 groups and sub-groups of peoples. The Diatonic Modes are the *only* scales I was able to find that were used by 18 (1/5) of these 82 groups.
4. Among the 87 groups and sub-groups in the Ethnic Section, there are 549 entries of scales used. Out of these 549 entries, 194 of them (just over 1/3) are the Diatonic Modes.
5. There are 135 scales in this book that are not 7-Tone Scales. 82 of these 135 scales (3/5) have a possible, often a probable, relationship to the seven 7-Tone Scales that make up the Diatonic Modes.
6. Six of the Diatonic Modes were the only officially permitted scales for use by the Roman Catholic Church for hundreds of years.

7. Over the last few decades, more of the Diatonic Modes are being used in all types of popular music, ranging from jazz to folk music to instrumental rock.

Why are the Diatonic Modes so frequently found in ethnic music? Well, one reason is that since the Roman Catholic Church used these scales exclusively in its music over so long a period of its history, then naturally, wherever Christianity went, the Diatonic Modes went also. Therefore, most European countries used these scales in their old music. But these weren't necessarily the "original" folk scales nor the only scales used in many cases. However, it is reasonable to presume that the Diatonic Scales may well have crowded out and replaced many "original" ethnic scales.

But some of the Diatonic Modes are also found in countries such as India, Japan, and China which are not at this time Christian countries. The question has been asked, are the Diatonic Modes just a "natural"? Or had they been brought in by Christians in the past? Or had they spread to other countries from ancient Greece as they had spread to the Roman Catholic Church?

Whatever their origin, the importance of the Diatonic Modes to music can't be denied.

THE DIATONIC MODES -- WHAT DO THEY LOOK LIKE?

"Diatonic" means "through the tones". The Diatonic Modes are all related to each other. They are what is called in this book a "Modal Series". In fact, in this book they are the Modal Series 7-I. For more about Modal Series, see Chapter 20, page 259.

The Diatonic Modes can be most easily seen and understood by using ONLY the white keys of the piano and then proceeding in the following manner:

"SEEING" THE DIATONIC MODES

CHART #87

Scale #1	Ionian (Major)	..... C D E F G A B c
Scale #50	Dorian	..... D E F G A B C d
Scale #15	Phrygian	..... E F G A B C D e
Scale #51	Lydian	..... F G A B C D E f
Scale #62	Mixolydian	..... G A B C D E F g
Scale #49	Aeolian (Natural minor)	..... A B C D E F G a
Scale #12	Locrian	..... B C D E F G A b

End of Chart #87

THE DIATONIC MODES -- MAJOR & MINOR MODES

In Chapter 3 (starting on page 21), we talked about tetrachords. The tetrachord labeled "M" contains the intervals of the 1st and 2nd tetrachords of the Major Scale. The tetrachord labeled "m" contains the intervals of the 1st tetrachord of our three common minor scales, the Natural, Melodic, and Harmonic minor scales. And the tetrachord labeled "mN" contains the intervals of the 2nd tetrachord of our Natural minor scale (minor Natural). Chapter 3, Chart #3, page 25, shows all of this.

Now let's look at the tetrachords that make up the Diatonic Modes:

#1 Ionian (Major)	..... M	-1-	M
#50 Dorian	..... m	-1-	m
#15 Phrygian	..... mN	-1-	mN
#51 Lydian	..... W	-1/2-	M
#62 Mixolydian	..... M	-1-	m
#49 Aeolian (Natural minor)	... m	-1-	mN
#12 Locrian	..... mN	-1/2-	W

Notice that three of these scales (the Ionian, Lydian, and Mixolydian) contain at least one "Major Tetrachord". These three Diatonic Scales are sometimes called the "Major Modes". That have a Major sound because of the Major Tetrachord(s).

Now notice that two others of these scales contain a "minor tetrachord" as its first tetrachord (The Dorian and Aeolian). Notice also that the Phrygian contains two "Natural minor Tetrachords" ("mN"). These three Diatonic Scales are sometimes called "minor Modes". They have a minor sound.

Play these six of the Diatonic modes up and down the piano on their white keys, and you can easily hear the Major and minor sounds.

THE DIATONIC MODES: WERE THEY EVER "LED"?

There is reason to believe that the Diatonic Modes, at least in one stage, all may have had a "leading tone". A leading tone is the 7th tone of the scale, when it is placed *below* the first note of the scale (tonic) *and is a half step*. This half step gives the hearer a feeling of being naturally "led" up into the tonic.

The Ionian (Major) and Lydian both have in their very structure, a natural leading tone:

Ionian:	(<u>b</u>),	C D E F G A B c	(b - C = ½ step)
Lydian:	(<u>e</u>),	F G A B C D E f	(e - F = ½ step)

However, the other four modes that were used in the Roman Catholic Church (the Locrian wasn't used) do not have a natural, built-in leading tone. It is generally believed that a leading tone was added at one time in early Church music to these four scales:

Dorian:	(c#),	D E F G A B C d
Phrygian:	(d#),	E F G A B C D e
Mixolydian:	(f#),	G A B C D E F g
Aeolian:	(g#),	A B C D E F G a*

*Scale #135 Magon Abot, an 8-Tone Scale, is a Jewish religious scale. It is exactly this form, that is, the Aeolian (Natural minor) with a leading tone.

CHAPTER 25

THE DIATONIC MODES, ALSO KNOWN AS THE ECCLESIASTICAL MODES

CONTENTS OF CHAPTER 25:

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A SHORT HISTORY OF CHURCH USE, NAMES, & MODAL NUMBERS

In the early centuries the "official" Christian Church, (the Roman Catholic Church), had its own scales and forms of music. This was because the other scales were considered too pagan sounding. Everywhere the Roman Catholic Church went, it took its musical scales with it. These often pushed aside or even replaced the existing ethnic scales.

About 350 A.D., the first four Ecclesiastical (Church) Modes were adopted by the Official Christian Church. This is commonly attributed to St. Ambrose, Bishop of Milan. These were, logically, numbered 1, 2, 3, and 4. They were named with the Greek words which mean First, Second, Third, and Fourth. Using only the white keys on the piano, they are:

- | | | | | | | | | | |
|-----|-----------|-------|---|---|---|-----|------------|-----|---------------------------|
| I | Protos | ..... | D | - | d | ... | Final on D | ... | (Later called Dorian) |
| II | Deuterios | ..... | E | - | e | ... | Final on E | ... | (Later called Phrygian) |
| III | Tritos | ..... | F | - | f | ... | Final on E | ... | (Later called Lydian) |
| IV | Tetartos | ..... | G | - | g | ... | Final on G | ... | (Later called Mixolydian) |

About 250 years later, around 600 A.D., four more modes, which had relationships to the first four modes, were added. This is traditionally attributed to St. Gregory I, the Pope at that time. The four scales in this second group were the first four scales all over again, except that instead of ranging from, for example, E - e, with its final (the last note of a piece) on E, it would range from four notes below E to five notes above E (b - B), but it would still have its final on E. E would still be the main note of the scale (in our example), but the range of the notes would be b - B -- but *centered around E*.

The first four scales (see above) which moved *within their octaves*, were then called the "Authentic" (original, real) scales. And the corresponding four scales (which moved *above and below their finals*) were called the "Plagal" (Greek: oblique; Latin: back formation) scales or modes.

Now they needed names other than First, Second, Third, and Fourth. So the Greek names of the first four scales were now used: Dorian, Phrygian, Lydian, and Mixolydian. Then, they reasoned, if the mode of D - d with the main note (Final) on D is to be called the Dorian, then, logically, the corresponding scale which started four notes below the "D" and which surrounded "D" (a - A) and had its Final on "D", could be called the "Hypodorian". ("Hypo" means "below", hence, "Below the Dorian".) So now there was the Dorian and its related "Below Dorian" (Hypodorian), the Phrygian and Hypophrygian, etc. Using only the white piano keys these are:

- | | | | | |
|----------------|-------|-------|-------|------------|
| Hypodorian | ..... | a - A | ..... | Final on D |
| Hypophrygian | ..... | b - B | ..... | Final on E |
| Hypolydian | ..... | c - C | ..... | Final on F |
| Hypomixolydian | ..... | d - D | ..... | Final on G |

(By the way, I don't think I've ever mentioned it before, but I use the capital letter within the scale octave and the small letter above or below the scale octave.)

As we have just said, the Phrygian and Hypophrygian are obviously related to each other. So they should "stand" next to each other on a list of scales, shouldn't they? Therefore the numbering of the Ecclesiastical Scales was changed to allow the original (Authentic) four scales to be listed next to their corresponding (Plagal) four scales, their "below-themselves" ("Hypo-") scales:

<u>Authentic</u>	<u>Plagal</u>
I Dorian	II Hypodorian
III Phrygian	IV Hypophrygian
V Lydian	VI Hypolydian
VII Mixolydian	VIII Hypomixolydian

(Notice that this system gives all of the Authentic Scales odd numbers and all of the Plagal Scales even numbers. This can be a handy memory aid.)

In the 1500's, two more Authentic modes (scales) with their corresponding Plagal modes were added to the "official" Ecclesiastical modes. They had already been in use "unofficially". Again, using only the white keys on the piano:

Aeolian	A - a	Final on A
Hypoaolian	e - E	Final on A
Ionian	C - c	Final on C
Hypoionian	g - G	Final on C

These four "new" scales (two of which, incidentally, the Aeolian and Ionian, are our Natural minor and Major Scales) were also numbered:

<u>Authentic</u>	<u>Plagal</u>
IX Aeolian	X Hypoaolian
XI Ionian	XII Hypoionian

Theoretically, there are two more modes, one Authentic and one Plagal which correspond to it. Using the white piano keys again, these would fit on B between the Aeolian (on A) and the Ionian (on C).

Locrian	B - b	Final on B
Hypolocrian	F - f	Final on B

However, in reality, these two were never used in the Church because of the dissonance between the dominant and the final. If these two modes (whose finals are on

the Aeolian (whose final is on A) and the Ionian(whose final is on C). This would have changed the Ecclesiastical modal numbering of the Ionian and the Hypoionian:

<u>Authentic</u>	<u>Plagal</u>
XI Locrian	XII Hypolocrian
(XIII Ionian)	(XIV Hypoionian)

For this reason, sometimes the Ionian is seen numbered as "XI" and other times as "XIII". And sometimes the Hypoionian is seen numbered "XII" and other times as "XIV". This, of course, depends on whether the Locrian and the Hypolocrian are being included in that particular list.

NOTE: Some People have looked at the Ancient Greek "Hyper-" scales (see page 362) and have applied "Hyper-" names to our Diatonic Modes. Since "hyper" means "above", they simply said that a scale starting one note above the original scale but centering around the original tonic, was the "hyper-scale". For instance, the Dorian starts on D. Therefore, they said, the Hyperdorian starts on E but centered around D, having its final on D. But, to my knowledge, these "hyper-scales" were not used and are not even commonly known.

**THE TRADITIONAL WAY TO SHOW
ECCLESIASTICAL MODES AND MODAL NUMBERS
(Scale Numbers Added)**

CHART #88

Authentic			Plagal		
I	Dorian	#50	II	Hypodorian	#49
III	Phrygian	#15	IV	Hypophrygian	#12
V	Lydian	#51	VI	Hypolydian	#1
VII	Mixolydian	#62	VIII	Hypomixolydian	#50
IX	Aeolian	#49	X	Hypoeolian	#15
XI	Locrian	#12	XII	Hypolocrian	#51
*XI or XIII	Ionian	#1	*XII or XIV	Hypoionian	#62

End of Chart #88

* The Ecclesiastical Numbers of the Ionian and Hypoionian vary, depending on whether the Locrian and Hypolocrian are included in the list. In reality, the Locrian and Hypolocrian were not used by the Church; however, some people include them in the lists.

NOTE: Notice that the Authentic Modes are all odd-numbered, and the Plagal Modes are all even-numbered.

NOTE: Don't forget that the Scale Numbers can be used to look up individual scales in The Grand Finale (which starts on page 405 for more information on them).

AUTHENTIC ECCLESIASTICAL MODES WITH CORRESPONDING PLAGAL ("HYPO-") MODES

CHART #89

#50	.....	I	Dorian	.....	D - d*	.....	Final on D
#49	.....	II	Hypodorian	.....	a - A	.....	Final on D
#15	.....	III	Phrygian	.....	E - e	.....	Final on E
#12	.....	IV	Hypophrygian	.....	b - B	.....	Final on E
#51	.....	V	Lydian	.....	F - f	.....	Final on F
#1	.....	VI	Hypolydian	.....	c - C	.....	Final on F
#62	.....	VII	Mixolydian	.....	G - g	.....	Final on G
#50	.....	VIII	Hypomixolydian	.....	d - D	.....	Final on G
#49	.....	IX	Aeolian	.....	A - a	.....	Final on A
#15	.....	X	Hypoaolian	.....	e - E	.....	Final on A
#12	.....	XI	Locrian	.....	B - b	.....	Final on B
#51	.....	XII	Hypolocrian	.....	f - F	.....	Final on B
#1	...	**XI <u>or</u> XIII	Ionian	.....	C - c	.....	Final on C
#62	..	**XII <u>or</u> XIV	Hypoionian	.....	g - G	.....	Final on C

End of Chart #89

- * Remember, this is using only the white keys on the piano.
- ** The Ecclesiastical Numbers of the Ionian and Hypoionian vary, depending on whether the Locrian and Hypolocrian are included. In reality, the Locrian and Hypolocrian were not used in Church Music, however, some people included them in the lists.

NOTE: Remember that the Scale Number can be used to look up individual scales in The Grand Finale, which starts on page 405.

A BRIEF NOTE ON THE ANCIENT GREEK DIATONIC MODES

The ancient Greeks used the same intervals (that is, the same notes) as we do in the Diatonic Modes. However, they played the scales in descending order, while we play them in ascending order. Understandably, this has led to a confusion in names! For example, their Mixolydian modes would be played B A G F E D C b with intervals 1-1-1-½-1-1-½. We "read" the intervals as ascending, so we played B C# D# E F# G# A# b (or, using all white keys on the piano so we can "see" it easier, the intervals would be F G A B C D E f). This is, of course, entirely different. To save confusion in this explanation, all ancient Greek scales will, from now on, be shown in *ascending* order (B C D E F G A b).

The Ancient Greeks had, on the whole, four *main* diatonic scales. Again, using only the white keys on the piano, these are:

Lydian	..... C - c	..... Final on C
Phrygian	..... D - d	..... Final on D
Dorian	..... E - e	..... Final on E
Mixolydian	..... B - b	..... Final on B

They also had three scales related to the above, starting five notes *below* the tonic and surrounding the tonic, which they called "Hypo-" scales ("hypo" = "below"):

Hypolydian	..... f - F	..... Final on C
Hypophrygian	..... g - G	..... Final on D
Hypodorian	..... a - A	..... Final on E

In addition, they had three more related scales starting five notes *above* the tonic and surrounding the tonic, which they called "Hyper-" scales ("hyper" means "above"). As always, I'm using only the white piano keys:

Hyperlydian	..... G - g	..... Final on C
Hyperphrygian	... A - a	..... Final on D
Hyperdorian	..... B - b	..... Final on E

You will notice that there is no Hypomixolydian nor Hypermixolydian. Just as the Church Modes didn't in practice use the B - b (Locrian), so it seems that the ancient Greeks didn't much use the B - b (their Mixolydian).

It seems that G - g was sometimes called by the ancient Greeks "Ionian" or "Iastian". Also, A - a was sometimes called Aeolian or Locrian.

THE DIATONIC MODES: ANCIENT GREEK NAMES

CHART #90

#1	Lydian	.....	C - c*	.....	Final on C
#51	Hypolydian	.....	f - F	.....	Final on C
#62	Hyperlydian	.....	G - g	.....	Final on C
#50	Phrygian	.....	D - d	.....	Final on D
#62	Hypophrygian	.....	g - G	.....	Final on D
#49	Hyperphrygian	.....	A - a	.....	Final on D
#15	Dorian	.....	E - e	.....	Final on E
#49	Hypodorian	.....	a - A	.....	Final on E
#12	Hyperdorian	.....	B - b	.....	Final on E
#62	Ionian, Iastian	.....	G - g	.....	Final on G
#49	Aeolian, Locrian (?)		A - a	.....	Final on A
#12	Mixolydian	.....	B - b	.....	Final on B

End of Chart #90

*Remember, this is using only the white keys on the piano.

NOTE: Don't forget that the Scale Numbers (#1, #12, etc) can be used to look up any scale in The Grand Finale (which starts on page 405) for more information about that particular scale.

**THE DIATONIC MODES:
ECCLESIASTICAL NAMES & CORRESPONDING ANCIENT GREEK NAMES**

(Shown Using Only the White Keys on the Piano)

CHART #91

*Scl. #	ECCLESIASTICAL NUMBER & NAME			ANCIENT GREEK NAME
#50	I (Protos) Dorian	D - d	Final on D	Phrygian
#49	II Hypodorian	a - A	Final on D	Hyperphrygian
#62	---	G - g	Final on D	Hypophrygian
#14	III (Deuteros) Phrygian	E - e	Final on E	Dorian
#12	IV Hypophrygian	b - B	Final on E	Hyperdorian
#49	---	A - a	Final on E	Hypodorian
#51	V (Tritos) Lydian	F - f	Final on F	---
#1	VI Hypolydian	c - C	Final on F	---
#62	VII (Tetartos) Mixolydian	G - g	Final on G	Ionian, Iastian
#50	VIII Hypomixolydian	d - D	Final on G	---
#49	IX Aeolian	A - a	Final on A	Aeolian, Locrian
#15	X Hypoaeolian	e - E	Final on A	---
#12	XI Locrian	B - b	Final on B	Mixolydian
#51	XII Hypolocrian	f - F	Final on B	---
#1	**XI <u>or</u> XIII Ionian	C - c	Final on C	Lydian
#62	**XII <u>or</u> XIV Hypoionian	g - G	Final on C	Hyperlydian
#51	---	F - f	Final on C	Hypolydian

End of Chart #91

* Use Scale Numbers to locate individual scales in The Grand Finale (which starts on page 405) for more information.

** In reality, the Locrian and Hypolocrian were not used in the Church. Some people, however, include them in the Ecclesiastical lists. Therefore, the Ecclesiastical numbers of the Ionian and Hypoionian vary, depending on whether the Locrian and Hypolocrian are included.

CHAPTER 26

MAKING OTHER SCALES FROM THE DIATONIC SCALES

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A FEW WORDS ABOUT MAKING OTHER SCALES FROM THE DIATONIC MODES

Many scales seem to have a close relationship to the Diatonic Modes. For instance, the 6-Tone Scale #90 (Major 3- 5 omit 6- 7-) is just like the Aeolian (Major 3- 6- 7-) except that the 5th Scale Point Tone has been omitted. Conversely, the 8-Tone Scale #128 (Major 3- 6- 6 7-) is just like the Aeolian except that a natural 6th Scale Point Tone has been added.

The four charts on the following two pages show how the different Diatonic Scales can be changed to come up with other scales of this book. A summary of these four charts is on the page immediately after them.

Remember, when it says "omit 2" or "add 2", it is talking about the 2nd Scale Point Tone of that particular scale. The "adding" can mean to add either a flatted or sharpened Scale Point Tone if the scale normally has a natural Scale Point Tone in that place. Or it can mean to add a natural Scale Point Tone if the scale normally has a flatted or sharpened Scale Point Tone there. For example, 8-Tone Scale 106 is Major 2- 2 3- 6- 7-. That could be formed either by adding a natural 2nd Scale Point Tone to the Phrygian (Major 2- 3- 6- 7-) or by adding a flatted 2nd Scale Point Tone to the Aeolian (Major 3- 6- 7-).

There is a short discussion of 21 Hindu scales that are formed from the Diatonic Modes, starting on page 373. Starting on page 371, there is also a short discussion about Scotch/Appalachian scales that are formed from the Diatonic Modes. And then the following chapter (Chapter 27, page 379) talks about the Japanese scales that are formed from the Diatonic Modes. There is more to say about the Japanese scales, so they get a chapter all of their own!

Since scales form Modal Series, the non-7-Tone Modal Series that are easily formed from the Diatonic Modes, is discussed and shown starting on page 367.

NOTE: Remember that the Aeolian scale is our Natural Minor Scale, and the Ionian Scale is our Major Scale.

NOTE: The Scale Numbers (#1 - #198) can be used to look up each particular scale numerically in The Grand Finale (which starts on page 405) for more information about that scale.

**5-TONE SCALES THAT CAN BE MADE
BY OMITTING 2 TONES FROM THE DIATONIC MODES**

CHART #92

Diatonic Mode & Its Scale Number	omit 2, 4	omit 2, 5	omit 2, 6	omit 2, 7	omit 3, 6	omit 3, 7	omit 4, 6	omit 4, 7	omit 5, 7
#49 Aeolian*		158	164		191	190	185	184	
#12 Locrian	154	158	159		157	156		153	160
# 1 Ionian**		178	180	182	189	192	194	197	198
#50 Dorian		161	164	166	191	192	185	186	
#15 Phrygian		158	164		163	162		155	160
#51 Lydian		167	173		183	187	194	197	
#62 Mixolydian		179	181	182	191	192	196	197	198

**6-TONE SCALES THAT CAN BE MADE
BY OMITTING 1 TONE FROM THE DIATONIC MODES**

CHART #93

Diatonic Mode & Its Scale Number	omit 2nd	omit 3rd	omit 4th	omit 5th	omit 6th	omit 7th
#49 Aeolian*	#75			#90	#92	#93
#12 Locrian		#71	#68	#72		
# 1 Ionian**		#86	#96			#103
#50 Dorian	#77	#95	#88		#92	#94
#15 Phrygian	#75	#73		#72		#74
#51 Lydian			#96			#99
#62 Mixolydian	#85	#95	#100		#102	#103

*This is our Natural minor Scale.

**This is our Major Scale.

8-TONE SCALES THAT CAN BE MADE BY ADDING 1 TONE TO THE DIATONIC MODES

CHART #94

Diatonic Mode & Its Scale Number	Add 2nd	Add 3rd	Add 4th	Add 5th	Add 6th	Add 7th
#49 Aeolian*	#106	#122			#128	#129
#12 Locrian	#105	#110		#114		#116
#1 Ionian**	#104		#131		#134	#136
#50 Dorian		#123			#128	#130
#15 Phrygian	#106	#111		#114	#117	
#51 Lydian	#107		#131		#132	
#62 Mixolydian		#123		#133		#136

9-TONE SCALES THAT CAN BE MADE BY ADDING 2 TONES TO THE DIATONIC MODES

CHART #95

Diatonic Mode	Add 2 & 4	Add 2 & 5	Add 2 & 6	Add 3 & 4	Add 3 & 5	Add 3 & 6	Add 3 & 7	Add 4 & 7
Aeolian*		#138	#139			#144		
Locrian		#138						
Ionian**	#140				#143		#145	#147
Dorian			#139	#142		#144	#145	
Phrygian		#138	#139					
Lydian	#140		#141					#147
Mixolydian				#142		#144	#145	#147

*This is our Natural minor Scale.

**This is our Major Scale.

SUMMARY OF CHARTS #92 - #95

**SCALE NUMBERS OF NON-7-TONE SCALES
WHICH ARE EASILY FORMED FROM THE DIATONIC MODES**

CHART #96

Diatonic Mode	5-Tone Scales omit 2 tones	6-Tone Scales omit 1 tone	8-Tone Scales add 1 tone	9-Tone Scale add 2 tones
Aeolian*	158, 164, 184, 185, 190, 191	$\frac{1}{2}$ of 64, 75, 90, 92, 93	106, 122, 128, 129, 135***	138, 139, 144, 148***
Locrian	153, 154, 156, 157, 158, 159, 160	68, 71, 72	105, 110, 114, 116	138
Ionian**	178, 180, 182, 189, 192, 194, 197, 198	86, $\frac{1}{2}$ of 87, 96, $\frac{1}{2}$ of 101, 103	104, 131, 134, 136	140, 143, 145, 147
Dorian	161, 164, 166, 185, 186, 191, 192	$\frac{1}{2}$ of 64, 77, $\frac{1}{2}$ of 87, 88, 92, 94, 95	123, 128, 130	139, 142, 144, 145, 146*
Phrygian	155, 158, 160, 162, 163, 164	$\frac{1}{2}$ of 64, 72, 73, 74, 75	106, 111, 114, 117	138, 139
Lydian	167, 173, 183, 187, 194, 197	96, 99	107, 131, 132	140, 141, 147
Mixolydian	179, 181, 182, 191, 192, 196, 197, 198	85, $\frac{1}{2}$ of 87, 95, 100, $\frac{1}{2}$ of 101, 102, 103	123, 133, 136	142, 144, 145, 147, 149*

*This is our Natural minor Scale.

**This is our Major Scale.

***This scale is more than an octave.

NOTE: Remember, the Scale Numbers (#1 - #198) can be used to look up individual scales in The Grand Finale (which starts on page 405) for more information.

SCOTCH & APPALACHIAN SCALES THAT ARE FORMED FROM THE DIATONIC MODES

The Scotch use twelve 6-Tone and five 5-Tone Scales that are made ^{by} from omitting tones from the Diatonic Modes. When some of the Scotch came over to America and eventually settled in the Appalachian Mountains of Tennessee and Kentucky, they kept many of their old world tunes and songs, changing them slightly in various ways over the years. (Anne?) Gilchrist goes into this in some detail in an article that I read some years ago but was never able to relocate to get the name for my book here. But Francis Collinson also talks about it on page 110 of his book, The Traditional & National Music of Scotland.

What was the form of the 5- and 6-Tone Scales? They had to do with the two half-step intervals that are in the Diatonic Modes. One group of the 6-Tone Scales left out the first half-step, making it $1\frac{1}{2}$ steps instead of 1 step and $\frac{1}{2}$ step. The other group of 6-Tone Scales left out the second half-step. As for the 5-Tone Scales, as you have probably deduced, they just left out *both* of the half steps in the Diatonic Modes, making $1\frac{1}{2}$ steps in both places.

These groups of scales are shown in detail in the following chart, Chart #97, on the next page. As a base, we will use only the white keys on the piano and go through the Diatonic Modes. Then first we'll show the two groups of 6-Tone Scales by eliminating the first half step between the D and the F (by "skipping" E), then we'll eliminate the second half step that comes between the A and the C (by "skipping" B). Lastly, we'll form the 5-Tone Scales by eliminating both of the two half steps, by leaving out both the E and the B. By the way, these three groups of scales form Modal Series 6-I and 6-III (Chapter 12, Chart #31), and Modal Series 5-V (Chapter 11, Chart #26).

FORMING SCOTCH & APPALACHIAN SCALES FROM THE DIATONIC MODES

CHART #97

6-Tone Scales:

Scale #86	. . . . .	C D	F G A B c	
Scale #77	. . . . .	D	F G A B C d	
Scale #99	. . . . .		F G A B C D	f
Scale #102	. . . . .		G A B C D	F g
Scale #90	. . . . .		A B C D	F G a
Scale #68	. . . . .		B C D	F G A b

(This is MS 6-I)*

Scale #103	. . . . .	C D E F G A	c	
Scale #92	. . . . .	D E F G A	C d	
Scale #72	. . . . .	E F G A	C D e	
Scale #96	. . . . .	F G A	C D E f	
Scale #95	. . . . .	G A	C D E F g	
Scale #75	. . . . .	A	C D E F G a	

(This is MS 6-III)*

5-Tone Scales:

Scale #192	. . . . .	C D	F G A	c
Scale #164	. . . . .	D	F G A	C d
Scale #197	. . . . .		F G A	C D f
Scale #191	. . . . .		G A	C D F g
Scale #158	. . . . .		A	C D F G a

(This is MS 5-V)*

End of Chart #97

*For more about Modal Series, see Chapter 20, page 259

ON THE FORMING OF 21 HINDU SCALES FROM THE DIATONIC MODES

In his book, Introduction to the Study of Musical Scales, Alain Danielou tells us on page 119 about a group of 21 scales (fourteen 8-Tone and seven 9-Tone Scales) that were developed as Hindu Scales from our Diatonic Modes. This is the way the Hindu Scales were developed:

1. Take the 7 Diatonic Modal Scales (Ionian, Dorian, etc.) using only the white keys on the piano, starting with the Ionian (our Major Scale) on C.
2. Have D \flat and F \sharp standing by ready to use.
3. From *each* of the seven Diatonic Modal Scales, form *two* different 8-Tone Scales in the following manner:
 - a. Each of the 7 Diatonic scales *plus* D \flat = 7 8-Tone Scales
 - b. Each of the 7 Diatonic scales *plus* F \sharp = 7 8-Tone Scales
4. Now from *each* of the 7-Tone Diatonic Scales, make a 9-Tone Scale by adding *both* the D \flat and the F \sharp = 7 9-tone Scales

This is shown in detail in Chart #98 on the following page.

The Hindus go through this procedure twice, once in the base clef and once in the treble clef. Since they are the same basic notes, these are only shown as 21 scales, not 42 scales.

These scales are also found sometimes among the Arabs and even sometimes among the Japanese.

The 8-Tone Scales formed by this method make up Modal Series 8-III (by adding the D \flat) and Modal Series 8-I (by adding the F \sharp). See Chapter 14, Chart #37.

The 9-Tone Scales formed by this method make up Modal Series 9-I. See Chapter 15, Chart #40.

NOTE: When doing this, the D \flat and the F \sharp always remain D \flat and F \sharp . They do not change to other letter-notes (C \sharp or G \flat).

HOW TO FORM 21 HINDU SCALES FROM THE DIATONIC SCALES

CHART #98

Scale #1 Ionian (Major) is:	. . . . .	C	D E F	G A B c
& forms:	Scale #104	C D \flat	D E F	G A B c
	Scale #131	C	D E F F \sharp	G A B c
	Scale #140	C D \flat	D E F F \sharp	G A B c
Scale #50 Dorian is:	. . . . .	D E F	G A B C	d
& forms:	Scale #123	D E F F \sharp	G A B C	d
	Scale #130	D E F	G A B C D \flat	d
	Scale #145	D E F F \sharp	G A B C D \flat	d
Scale #15 Phrygian is:	. . . . .	E F	G A B C	D e
& forms:	Scale #106	E F F \sharp	G A B C	D e
	Scale #117	E F	G A B C D \flat	D e
	Scale #139	E F F \sharp	G A B C D \flat	D e
Scale #51 Lydian is:	. . . . .	F	G A B C	D E f
& forms:	Scale #107	F F \sharp	G A B C	D E f
	Scale #132	F	G A B C D \flat	D E f
	Scale #141	F F \sharp	G A B C D \flat	D E f
Scale #62 Mixolydian is:	. . . . .	G A B C	D E F	g
& forms:	Scale #133	G A B C D \flat	D E F	g
	Scale #136	G A B C	D E F F \sharp	g
	Scale #147	G A B C D \flat	D E F F \sharp	g
Scale #49 Aeolian (Natural minor) is:	. . . . .	A B C	D E F	G a
& forms:	Scale #122	A B C D \flat	D E F	G a
	Scale #128	A B C	D E F F \sharp	G a
	Scale #144	A B C D \flat	D E F F \sharp	G a
Scale #12 Locrian is:	. . . . .	B C	D E F	G A b
& forms:	Scale #105	B C D \flat	D E F	G A b
	Scale #114	B C	D E F F \sharp	G A b
	Scale #138	B C D \flat	D E F F \sharp	G A b

End of Chart #98

NOTE: Remember, Scale Numbers can be used to look up individual scales in The Grand Finale, which starts on page 405.

HOW TO FORM OTHER MODAL SERIES* EASILY FROM THE DIATONIC MODES

We have formed several Modal Series of non-7-Tone Groups from the Diatonic Modes in the preceding pages. However, there are even more Modal Series that can be made from them by omitting or adding certain notes (*not* Scale Point Tones). This will be shown on two different charts from two different perspectives on the following two pages.

The first chart, Chart #99, shows all of the Modal Series (including the ones on the preceding pages) that are formed from the Diatonic Modes that I have come across in my researching plus the notes to be omitted or added plus the scales that make up these Modal Series. Some of them are Modal Series that are completely filled in with scales that I have run across in reference material. Others are Modal Series with blank spots where I have only run across a few scales that would fit into that Modal Series. I am convinced, however, that in some country somewhere, that there are ethnic scales that would fill in these blanks; I just haven't found them in any reference material yet.

The second chart, Chart #100, is sort of a summary of Chart #99. It merely shows which notes to omit or add to the Diatonic Modes and which Modal Series would result from this process. It is done alphabetically by the notes to be omitted or added, which puts the resulting Modal Series in a different order than they are on Chart #99.

In order to see all of these scales easily, use *only* the white keys on the piano. Then omit or add other notes as indicated on the chart. Remember, if Chart #99 says to omit E, then just play only the white keys, all except E, and cycle up the scale as with the Diatonic Modes (see "The Diatonic Modes: What Do They Look Like?" on page 351). Or if the chart says to add D \flat , then play all of the white keys but add the black key, D \flat and continue cycling the notes.

If this is done for each of the Modal Series shown on the following chart, then each of those Modal Series can easily be formed.

NOTE: Remember, the Scale Numbers can be used to obtain more information on individual scales in The Grand Finale, which starts on page 405.

*For an explanation of Modal Series and for the Modal Series themselves, see Chapter 20.

FORMING OTHER MODAL SERIES* FROM THE DIATONIC MODES (by MS #s)

CHART #99

<u>To Form:</u>	<u>OMIT from Diatonic Modes:</u>	<u>to Make These Scales:</u>
Modal Series 5-I (Kumoi):	C & G	#159, 163, 167, 186, 190
Modal Series 5-II (Semi. Pent.):	E & A	#153, 161, 181, 187, 189
Modal Series 5-III (Hiraj.):	D & G	#157, 162, 173, 178, 184
Modal Series 5-IV (Pelog):	D & A	#155, 156, 179, 180, 183
Modal Series 5-V (Pentatonic):	E & B <u>or</u> C & F <u>or</u> B & F	#158, 164, 191, 192, 197
Modal Series 5-VII:	C & E	#154, 166, 196 + 2 unknowns
Modal Series 5-VIII:	A & F <u>or</u> B & D	#160, 182, 194 + 2 unknowns
Modal Series 5-IX:	B & G	#185, 198 + 3 unknowns
Modal Series 6-I:	E	#68, 77, 86, 90, 99, 102
Modal Series 6-II:	C	½ of #64, 93, 100 + 3 unknowns
Modal Series 6-III:	B <u>or</u> F	#72, 75, 92, 95, 96, 103
Modal Series 6-IV:	G	#73, 88, 90 + 3 unknowns
Modal Series 6-V:	A	#85 + 5 unknowns
Modal Series 6-IX:	D	#71, 74 + 4 unknowns
<u>To Form:</u>	<u>ADD to Diatonic Modes:</u>	<u>To Make These Scales:</u>
Modal Series 8-I:	F#	#106, 107, 114, 116 123, 128, 131, 136
Modal Series 8-III:	D \flat	#104, 105, 117, 122, 130, 132, 133, + 1 unknown
Modal Series 9-I:	D \flat & F#	#138, 139, 140, 141, 144, 145, 147 + 2 unknowns

*For explanations of "Modal Series" and for the M.S. themselves, see Chapter 20.

End

FROM THE DIATONIC MODES TO OTHER MODAL SERIES* (Alphabetically)

CHART #100

Modal Series Number	OMIT	ADD	=	Modal Series Number
Modal Series 7-I (Diatonic Modes)	A & D		= ..	Modal Series 5-IV
	A & E		= ..	Modal Series 5-II
	A & F		= ..	Modal Series 5-VIII
	B & D		= ..	Modal Series 5-VIII
	B & E		= ..	Modal Series 5-V
	B & F		= ..	Modal Series 5-V
	B & G		= ..	Modal Series 5-IX
	C & E		= ..	Modal Series 5-VII
	C & F		= ..	Modal Series 5-V
	C & G		= ..	Modal Series 5-I
	D & G		= ..	Modal Series 5-III
	A		= ..	Modal Series 6-V
	B		= ..	Modal Series 6-III
	C		= ..	Modal Series 6-II
	D		= ..	Modal Series 6-IX
	E		= ..	Modal Series 6-I
	F		= ..	Modal Series 6-III
	G		= ..	Modal Series 6-IV
		B \flat	= ..	Modal Series 8-I
		D \flat	= ..	Modal Series 8-III
		D \sharp	= ..	Modal Series 8-IV
		F \sharp	= ..	Modal Series 8-I
		G \sharp	= ..	Modal Series 8-II
		B \flat & E \flat	= ..	Modal Series 9-I
		B \flat & F \sharp	= ..	Modal Series 9-I
		D \flat & F \sharp	= ..	Modal Series 9-I

*For an explanation of Modal Series and to see
the Modal Series themselves, see Chapter 20

End of Chart #100

NOTE: Remember, you can use the Scale Numbers (#1 - #198) in order to locate the individual scales in The Grand Finale (which starts on page 405) to obtain more information on them.

CHAPTER 27

LET'S TALK ABOUT JAPANESE SCALES

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LET'S TALK ABOUT JAPANESE SCALES

Japanese scales are especially confusing to the Western mind. Two reasons are that (1) it would seem that several scales have the same name, and (2) one scale has several names which are the same names that other scales have.

One explanation for this is that it seems that the scales are named after the note on which they start. For instance, if Scale #196 Major 4 omit 7 omit, a Ryosen scale, starts on D, it is called "Ichikosucho"; but the very same scale starting on G would be called "Sojo". The Ryo Scale #190 Major 3 omit 6 omit 7-, when starting on D is also called "Ichikosucho".

If we were to apply this to Western scales, we could take, for instance, the Major scale and start it on C. The name would be the "C Scale". But if we started the Major Scale on G, it would be named the "G Scale". To an extent we do this when we speak of the "C Major Scale" and the "G Major Scale". The above Japanese Scale might, perhaps, more properly be called "Ryosen Ichikosucho" and "Ryosen Sojo" and Ryo Ichikosucho".

Another reason for confusion in the Japanese scales is that a 5-Tone Scale and the same 5-Tone Scale *plus* two tones (making a 7-Tone Scale) have the same name. For instance, #191 Major 3 omit 7 omit, a 5-Tone Scale, and #50 Major 3- 7-, a 7-Tone Scale) are both called "Ritsu" -- and with the same different names for them if they start on different notes.

Yet another reason for confusion with Japanese scales is that a scale may be considered Major (ryosen) if it starts on one note, but the same scale would be considered minor (ritsusen) if it starts on another note. (This "minor" and "Major" seem usually to be about a 4th apart.) This seems to be because the actual scale itself is a "minor" scale, but when a certain note is lowered $\frac{1}{2}$ step, then it is thought of as "Major". *Perhaps* this has to do with Just tuning as opposed to Tempered tuning.

So the whole thing seems to boil down to the fact that the Westerner considers particular intervals to be a scale. But the Japanese, on the other hand, looks at a certain arrangement of tones which start on a particular note to be a scale -- it isn't the interval that counts; it's the starting note.

And, at least some years ago at the time when my various source materials were written they didn't "practice scales" as we do. The entire concept was different. The "scales" weren't know as "scales" in our sense of the word at all. Let me hasten to reiterate that this was the case at the time my source materials were written some years ago, and I don't know if this has changed by the time I am writing this.

I realize that this is a great over-simplification of the subject of Japanese scales. But it will give an idea of the problems facing the Westerner who tries to understand Japanese and Chinese "scales". There actually is no such thing! Their entire concept is very different, and I don't even pretend to understand it all. Therefore, my advice would be not to worry about the names of the Japanese scales -- just consider intervals or tetrachord and trichord combinations.

However, if you are a serious student of Japanese or Chinese music, by all means go into the subject much more carefully. Use the books listed in this bibliography and any others you find.

But in the meantime, think tetrachords!

JAPANESE SCALES: A SHORT DISCUSSION OF THE NAMES OF NOTES

According to Robert Garfias' book, Music of a Thousand Autumns, the names of the notes are as follows:

D	=	Ichikotsu*
D#	=	Tangin
E	=	Hyojo*
F	=	Shosetsu
F#	=	Shimomu
G	=	Sojo*
G#	=	Fusho
A	=	Oshiki*
A#	=	Rankei
B	=	Banshiki*
C	=	Shinson
C#	=	Kaminu

*These note-names are found in the names of scales which start on those notes, such as "Ritsu Hyojo".

However, this still leaves us with the names "Taishiki" and "Suicho" which are not found in the names of notes, though, in one book I found that Suicho is a secondary mode of Oshiki and is sometimes included with Oshiki. They share a common fundamental pitch. In going through the scales that I found with those names (not the ritsusen-ryosen ones), I found that both Suicho and Oshiki share A and E (1st and 5th Scale Point Tones):

	1st			5th		7th	
#192 Ritsu-Oshikitcho	A	B	D	E	F#		a
#164 Yo Ritsu-Oshikitcho	A	B#	D	E	G		a
<u>OR</u>	A	C	D	E	F##		a
#197 Ryo-Suicho	A	B	Db	E	F#		a
<u>OR</u>	A	B	C#	E	F#		a
#191 Ryo-Suicho	A	B	D	E	F##		a
#1 Major	A	B	C#	D	E	F#	G#

Notice that all of the 5-Tone Scales (above) have the 1st and 5th Scale Point Tones exactly like the Major Scale, but not one of the 5-Tone scales there have the 7th Scale Point Tone used in the Major Scale.

Also, my theory is that if we took into consideration the differences between Just Tuning and Tempered Tuning, then all four of the above (Japanese Scales) would lack the true 3rd Scale Point Tone of the Major Scale. However, I have no proof of this.

Let's follow the same reasoning with Hyojo versus Taishikicho as we followed with Oshikicho versus Suicho. I read in one of my source materials that Suicho was a secondary mode of Oshiki. The same relationship occurs between the Hyojo and the Taishikicho scales as we found between the Oshikicho and the Suicho scales. And the *very same scales* are used in *both* cases -- just that the Oshikicho-Suicho scales started on A, and the Hyojo-Taishikicho scales started on E. Therefore, I believe that it is safe to say that Taishiki is a secondary mode of Hyojo, just as Suicho is a secondary mode of Oshiki. Notice (below) that the same scale *numbers* are used as with the scales above, and that the scale *names* are the same in the first part of the name. The difference in the name lies in the last part of the name:

	<u>1st</u>			<u>5th</u>		<u>7th</u>	
#192 Ritsu Hyojo	E	F#		A	B	C#	e
#164 Yo Ritsu-Hyojo	E	G		A	B	D	e
OR	E	F##		A	B	D	e
#197 Ryo Taishikicho	E	F#	Ab		B	C#	e
OR	E	F#	G#		B	C#	e
#191 Ryo Taishikicho	E	F#		A	B	D	e
#1 Major	E	F#	G#	A	B	C#	D# e

Notice that all of the 1st and 5th Scale Point Tones are exactly the same as the Major. And, again, none of them have the true 7th Scale Point Tone of the Major Scale.

SOME JAPANESE DEFINITIONS

(at least as close as I could get them!)

-cho a tune, tone, scale

chosi mode, tune, tone, key, note, pitch. Becomes "joshi" in a compound word (such as Hirajoshi). All chosi divided into two structural types: Ryo and ritsu (Major and minor)

hira common, ordinary

Hirajosh . . . normal scale

In Flat (b)

Kai regular

Ritsu minor

ritsuryo . . . the Chinese system of musical sounds; standard tones

Ritsusen . . . minor

ryoritsu . . . co-existent, compatible

Ryosen . . . Major

sen a line of the staff

Yo Sharp (#)

JAPANESE NAMES FOR INDIVIDUAL SCALES OF THE COMMON PENTATONIC MODES

- I. (#192) Pentatonic #1 (Major 3 omit 7 omit)
 - A. Ritsu Scale
 1. Starting on C = Ritsu-sen (?)
 2. Starting on D = Ritsu (?)
 3. Starting on E = Hyojo
 4. Starting on A = Oshikicho
 5. Starting on B = Banshikicho
 - B. Ryo #3 (Chi) - Sojo
 - C. Ritsusen - Hyojo
 - D. Ryosen - Suijo

- II. (#164) Pentatonic #2 (Major 2 omit 3- 6 omit 7-)
 - A. Yo Scale
 1. Starting on D = Yo
 2. Starting on E = Ritsu Hyojo
 3. Starting on A = Ritsu Oshikicho
 4. Starting on B = Ritsu Banshikicho
 - B. Ryo #4 (U)
 - C. Ritsusen - Ichiotsu
 - D. Ryosen - Sojo

- III. (#197) Pentatonic #3 (Major 4 omit 7 omit)
 - A. Ryo-sen Scale
 1. Starting on D = Ichikosucho
 2. Starting on E = Taishikicho
 3. Starting on G = Sojo
 4. Starting on A = Suicho
 - B. Ryo #5 (Kyu)
 - C. Ritsusen - Banshiki
 - D. Ryosen - Taishiki

- IV. (#191) Pentatonic #4 (Major 3 omit 6 omit 7-)
 - A. Ryo
 1. Starting on D = Ichikosucho
 2. Starting on E = Taishikicho
 3. Starting on A = Suicho
 - B. Ryo #1 (Sho)
 - C. Ritsu, starting on E = Taishikicho
 - D. Ritsusen - Oshiki
 - E. Ryosen - Ichiotsu

- V. (#158) Pentatonic #5 (Major 2 omit 3- 4 omit 6- 7-)
 - A. Ryo #2 (Kaku)
 - B. Ritsusen - Sojo
 - C. Ryosen - Banshiki

REMEMBER:

1. The Common Pentatonic Modes are closely related to the Diatonic Modes.
2. That Ritsusen means minor; Ryosen means Major
3. Don't forget that the Scale Numbers (#158, 164, 191, 192, and 197) can be used to locate the individual scales in The Grand Finale (which starts on page 405) for more information on each scale.

SHINTO GAGAKU CEREMONIAL MUSIC

According to Robert Garfias, the Shinto Gagaku ceremonial music has three separate tonal systems:

- A. Kagura, which has 1 modal structure
- B. Komagaku, which has 3 modal structures
- C. Togaku, which has 3 modal structures:
 1. System I (Togaku Mode, System I)
 - a. Sojo, which is the Major Scale, starting on G
 - b. Ichikosucho, which is the Mixolydian Scale, starting on D
 - c. Oshikicho, which is the Dorian Scale, starting on A
 2. System II (Togaku Mode, System II)
 - a. Suicho, which is the Mixolydian, starting on A
 - b. Hyojo, which is the Dorian, starting on E
 3. System III
 - a. Taishikicho, which is the Mixolydian, starting on E
 - b. Banshikicho, which is the Dorian, starting on B

SECTION G

EACH SCALE

SEPARATELY WITH ITS INFORMATION

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CHAPTER 28

BEFORE WE GET TO THE GRAND FINALE ITSELF

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Just a Word About The Grand Finale	Page 393
Definitions of Terms Used in The Grand Finale	394
Outline Showing Form of The Grand Finale	398

JUST A WORD ABOUT THE GRAND FINALE

The Grand Finale is a SUMMARY of all of the material in this book listed under individual scales.

All of the scales contained in this book are in The Grand Finale and are in numerical order (#1 - #198). In addition, the Western Chromatic Scales (#199 - #202) are included with just a staff, notes, and source where found.

On the next page is a short "Glossary" of just the words that you might need for The Grand Finale. The actual Glossary for this book is in the back of the book and starts on page 803, but this shortened Glossary is repeated here to save you, the reader, the bother of having to turn to the back of the book.

On page 398 is an outline of The Grand Finale. This shows all of the categories of information that might be shown with each scale, though all of the categories do not apply to each scale. (For instance, only a few of the scales are Combination Scales.) Also on this outline are the page numbers that will explain each category of information in case of confusion.

REMEMBER: The scale numbering system (#1 - #198) is based on the Major Scale as Scale #1, and all of the other scales are numbered as they start to differ from the Major Scale.

NOTE: In The Grand Finale each individual scale is shown with the notes on a staff. These are all shown in the Key of "C" for greater ease in seeing and comparing the scales. However, except for the Combination Scales and scales over an octave, all twelve keys are shown by just note names at the end of each scale.

NOTE: Following the last page of The Grand Finale are some empty pages with a blank outline of The Grand Finale. These can be used by the reader to record any additional scales he may find -- and I hope there are many!

DEFINITIONS OF TERMS USED IN *THE GRAND FINALE*

PLUS PAGE NUMBERS FOR MORE INFORMATION ON THESE TERMS

---A---

Altered: This refers to how by a simple omission or a simple addition to a particular scale, a scale of a different tone group can be formed. Many other scales besides the Major Scale are Altered. Page 323

Alternate Name: Scales often have several different names, depending on the country or the situation. (Example: The Major Scale and the Ionian Scale, a Church scale, are the same scale.) Or they may have no "name" at all but be called simply after the name of the country or ethnic group which uses them. (Example: Arabic, Hindu.) In The Grand Finale each scale is shown with its Scale Number and all of the other names under which I was able to find the scale. Then in the "Alphabetical Index of Alternate Scale Names" all of the alternate names of all of the scales in this book are listed alphabetically with Scale Numbers showing which scales are called by that particular name. Page 817

Alternate Symbols: Each Scale in this book has been given a Symbol that shows the relationship of that scale to the Major Scale. (Example: Scale #84 is Major 2- 6omit 7-. That is the Symbol of Scale #84.) An Alternate Symbol would be one that would still be true for that scale but would be different from the Symbol I had assigned to it - the intervals, of course, would remain the same. Alternate Symbols for #84 would be "Major 6omit 2- 7-" or "Major 2- 6+ 7omit" or "Major 7omit 2- 6+" or "#31 Spanish 6omit" (since, except for the omitted 6th Scale Point, it is just like #31 Spanish, which has the Symbol of Major 2- 7-). Alternate Symbols come from 7-Tone Scales. All of the Alternate Symbols are listed under each scale in The Grand Finale, with the "real" Symbol in capital letters. However, only alterations from the Major Scale are listed in Chart #13, "Scales by Symbols & Alternate Symbols in Order of Numerical Alterations". Page 83

---B----

Backward (Bkwd) (Inverted, Descending-Inverted, Des.-Inv., Retrograde-Inversion): Take the descending intervals of a scale (from highest note by interval) to the lowest note. Then play the descending intervals in an ascending manner. Example: Scale #158 would normally be played as C-E \flat -F-A \flat -B \flat -c. The intervals are 1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1. Written backwards, these intervals are 1-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$. Then these backward intervals are played in an ascending manner, the notes being C-D-E-G-A-c -- which is Scale #196. The scales are show "Backwards" starting on Page 250

(cont'd)

Definitions of Words Used in The Grand Finale (cont'd)

This can also be done with the Modal Series, often producing another "known" Modal Series. Page 285

Backward Modal Series Scale Point Tone (Backward MS:SPT): The position in a Modal Series that a scale would have if its intervals were inverted and were played in the inverted manner. See "Backward", above. Page 248

---C---

Combination Scale: This refers to any scale with a "consistent inconsistency" on one particular point in the scale. For example: Scale #5 Jewish, Major [2/2+] 7-. This combines Scale #32 Major 2+ 7- and Scale #62 Major 7-. As we look at Scale #5, we see that throughout the piece the 7th Scale Point Tone is always flatted (lowered a half step), but sometimes the 2nd Scale Point Tone is neutral and sometimes it is raised a half step (sharped). But never is it played with the natural (neutral) 2nd, raised 2nd, and natural 3rd Scale Point Tones in consecutive order. If it were, it would be an 8-Tone Scale which had the raised 2nd as part of the scale itself and would then be designated as Major 2 2+ 7-. But, back to Scale #5, in this scale the 2nd fluctuates. This fluctuation is indicated by the two notes being put together in brackets, but separated by a slash: [2/2+]. The fluctuating intervals are also shown in the same ways: [1-1-½/1½-½-½] -1-1-½-1. On the staff the fluctuating notes are shown connected with a slur: ~ There are ten Combination Scales in this book. Page 124

Combination of, Combining: Referring to a Combination Scale only (see above). This is said when referring to the two scales that make up the Combination Scale. Page 124

---E---

Ethnic Uses: Tells which specific country or group of people use that particular scale. This is not a complete list, only as complete as I could find. Page 193

---F---

Formula: Tetrachordal Formula. A consecutive list of the Tetrachords, Trichords, and/or Connecting Intervals that make up a scale, using the signs for Tetrachords and Trichords. Page 24
Each scale has its *own distinct, unchanging Formula*, which is the most reliable means of identification. There are *NO* alternate Formulas. Page 23

---I---

Intervals: The distance in half and/or whole steps between two specific tones

(cont'd)

Definitions of Words Used in The Grand Finale (cont'd)

(notes). Example: The interval between "C" and "D \flat " is $\frac{1}{2}$ step, between "A" and "C" is a step and a half ($1\frac{1}{2}$), etc. Page 35

---M---

Modal Series (MS): This can best be defined by giving an example: Take a scale either by the intervals involved or by the names of the notes involved. Let's use the 5-Tone Scale #191 Pentatonic #1 (Major 3omit 7omit). We will make a Modal Series out of it by starting a "new" scale on each note of #191 consecutively, cycling both the notes and the intervals involved:

C-D-F-G-A-c	1- $1\frac{1}{2}$ -1-1- $1\frac{1}{2}$
D-F-G-A-C-d	$1\frac{1}{2}$ -1-1- $1\frac{1}{2}$ -1
F-G-A-C-D-f	1-1- $1\frac{1}{2}$ -1- $1\frac{1}{2}$
G-A-C-D-F-g	1- $1\frac{1}{2}$ -1- $1\frac{1}{2}$ -1
A-C-D-F-G-a	$1\frac{1}{2}$ -1- $1\frac{1}{2}$ -1-1

Each of these five steps in the series (or cycle) will sound different from the other four. The five scales together make up a Modal Series (which is numbered MS 5-V in this book). The scales in this book have all been put into a Modal Series. Some of these Modal Series have only one "known" scale in them, others have several scales, others are completely filled Page 261

Modal Series Scale Point Tone Number (MS:SPT): This number shows where a particular scale stands in its own Modal Series. For instance, in the example above, the scale with the intervals 1- $1\frac{1}{2}$ -1- $1\frac{1}{2}$ -1 would be in the 5th (V) Modal Series of 5-Tone Scales (5) and is the fourth scale (4) down in the Series. Therefore, its Modal Series Scale Point Tone Number (MS:SPT#) is MS 5-V:4. Page 263

---N---

Name: The one particular name under which one particular scale goes in this book. A scale may have many Alternate Names (see above), but only one "Real Name". The "real" Name is shown in all capital letters in The Grand Finale.

Number (Scale #): A special number (#1 - #198) which I have assigned to each particular scale. Also referred to as the "Scale Number". Page 8

Number of Tones (#-Tn): Designates how many tones are in a particular scale, whether 5 tones, 6 tones, 7 tones, 8 tones, 9 tones, or 10 tones. Page 40

(cont'd)

Definitions of Words Used in The Grand Finale (cont'd)

---O---

Omit (om): Indicates a tone that is to be omitted from one scale in order to form another scale of a different tone group. (see "Altered", above). Example: If the 7th Scale Point Tone is omitted from the Major Scale, then #103, Guido's famous scale, a 6-Tone Scale is formed. When shown with the 8-Tone and 9-Tone Scales, for instance, #120 Irak (which is Major 2- 5- 6- 6), if one of the "added tones" (either 6- or 6) is omitted to form a 7-Tone, 6-Tone, or 5-Tone Scale, then the non-omitted "added tone" will also be put down so as to show that *both* of that particular scale point are not omitted, for instance, the 7-Tone Scale #23 Chromatic Lydian = Irak 6-omit 6 (retained) shown "Irak 6-omit 6".

---S---

Scale Number (Scale #): #1 - #198. See "Number" above.

Source: A source from the Bibliography where a particular scale can be looked up and verified. Page 791

Spelling: The names of the notes used for a scale with their sharps and flats. Example: Are the Intervals $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ "spelled" C-C#-D-E-F#-G-A-B-c, or are they spelled C-D \flat -D-E-F#-G-A-B-c? Page 123
Also some purists say a few ancient scales should be spelled differently by today's spelling. Page 123

Symbol: The Symbol of a scale shows how a scale differs from the Major Scale. Example: The Symbol for #69 Hidshaf is Major 2- 3- 4omit 5- 7-. This shows that the Hidshaf Scale is like the Major Scale with the 4th Scale Point Tone omitted and the 2nd, 3rd, 5th, and 7th Scale Point Tones lowered (flatted) half a step. Some scales have Alternate Symbols (see above, "Alternate Symbols" and "Spelling"), but I have chosen one Symbol and used that one throughout the book. The Symbol makes it possible to take the Major Scale in any key and then change it to any scale you desire just by following the alterations-from-Major shown by the Symbol. Page 8

---U---

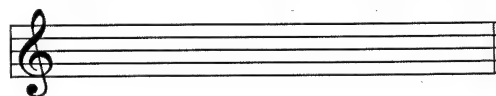
Used by: Occasionally in The Grand Finale there will be this term at the end of the information about a certain scale. This is just to show that the particular scale has actually been used in a composition. A complete list of those who used a scale might be all but endless, but the few given are just little "tastes" to whet the reader's interest.

OUTLINE SHOWING FORM OF *THE GRAND FINALE*
PLUS

PAGE NUMBERS FOR EXPLANATION OF THE DIFFERENT TYPES OF INFORMATION

				Reference Page
#			8
↓	SYMBOL		8
↓	↓		NAME	
↓	↓	↓		# TONES .. 40
↓	↓	↓	↓	↓

#	SYMBOL	NAME	#-Tns
---	--------	------	-------



	Intervals:	35
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	Modal Series Scales Point Tone	
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	Backward MS:SPT:	285
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	Alternate Symbols:	83
	Alternate Names:	817
	Altered:	323
	Ethnic Uses:	193
	Used By:	
	Note (Usually if over an octave)	
	Source:	791
Scale in 12 Keys (perhaps with *, **, or ***)	.....	757
* = Uses only white piano keys except for one note		
** = Uses only white keys on piano	.....	785
*** = Uses only (and all) black keys on piano	.....	788

NOTE: Also refer to the Glossary on the pages immediately preceding this page.

NOTE: All information will not be applicable to all scales.

NOTE: "Used by:" is very sketchy, just giving a few examples, if any.

CHAPTER 29

THE GRAND FINALE

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#3	Chrm. Mixolydian, Asc.	410	#40	Hungarian-minor	453
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#25	Chromatic Phrygian, Asc.	434	#62	Mixolydian	486
#26	Persian	435	#63	Negro Spiritual	490
#27	Rahawi	436	<u>6-TONE SCALES:</u>		
#28	Oriental	437	#64	Appalachian	493
#29	Persian	438	#65	African	494
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#83	Bangala	516	#118	Buzurg	570
#84	Greek	517	#119	Scotch Bagpipe Tuning	571
#85	Polish	518	#120	Irak	572
#86	Ionian 6-Tone	519	#121	Jobim's Scale	573
#87	Appalachian	520	#122	Aeolian 8-Tone #1	574
#88	Akebono	521	#123	Dorian 8-Tone #1	576
#89	Overtone 6-Tone	522	#124	Conway's 8-Tone	578
#90	Aeolian 6-Tone	523	#125	Diminished #1	579
#91	Armenian,Ancient Church	525	#126	Composite #2	580
#92	Greek	526	#127	Arabic	581
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#94	Hungarian	530	#129	Isfahan	584
#95	Appalachian	531	#130	Dorian 8-Tone #2	586
#96	Scotch	532	#131	Ryo 8-Tone	588
#97	Whole Tone	533	#132	Hindu	590
#98	Prometheus	535	#133	Hindu	592
#99	Lydian 6-Tone	536	#134	Bop Scale	594
#100	Scotch	538	#135	Magon Abot	595
#101	Appalachian	539	#136	Mixolydian 8-Tone	596
#102	Mixolydian 6-Tone	540			
#103	Guido's Scale	542			
	8-TONE SCALES:			9-TONE SCALES:	
#104	Hindu	547	#137	Tcherepnin	601
#105	Locrian 8-Tone #1	548	#138	Locrian 9-Tone	602
#106	Phrygian 8-Tone #1	550	#139	Phrygian 9-Tone	604
			#140	Hindu	606
			#141	Hindu	608

(cont'd)

Scales: The Contents of THE GRAND FINALE (cont'd)

#	Name	Page	#	Name	Page
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#144	Aeolian 9-Tone	614	#174	Pentatonic-Dominant	670
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#146	Armenian, Ancient Church ..	618	#176	Dominant Pentatonic	673
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#158	Pentatonic #5	639	#190	Kumoi #4	698
#159	Kumoi #5	642	#191	Pentatonic #4	700
#160	Javanese	644	#192	Pentatonic #1	703
#161	Semitonal Pentatonic #1	646	#193	Jazz Pentatonic	707
#162	Hirajoshi #4	648	#194	India	708
#163	Kumoi #2	650	#195	Japanese Pentatonic #1	709
#164	Pentatonic #2	652	#196	African	710
#165	Japanese Pentatonic #4	656	#197	Pentatonic #3	711
#166	Jazz minor Pentatonic	658	#198	African	714
#167	Kumoi #3	660	<u>WESTERN CHROMATIC SCALES:</u>		
#168	Japanese Pentatonic #5	662	#199	Chromatic Harmonic	716
#169	Diminished Pentatonic	663	#200	Chromatic Melodic	716
#170	Jazz Dominant Pentatonic ..	664	#201	Chromatic Melodic Major ...	717
#171	Japanese Pentatonic #3	665	#202	Chromatic Melodic minor ...	717

THE GRAND FINALE: Part 1

7-TONE SCALES

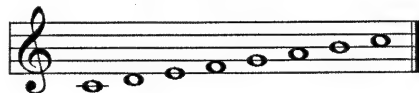
This first part of The Grand Finale contains the following 7-Tone Scales (63 Scales):

- | | |
|------------------------------------|--------------------------------|
| #1 Major | #33 Arabic |
| #2 Ananda | #34 Melodic minor |
| #3 Chromatic Mixolydian, Asc. | #35 Arezzo |
| #4 Chromatic Dorian, Asc. | #36 Basque |
| #5 Jewish | #37 Lydian-Diminished |
| #6 Neapolitan-Major | #38 Conway's 7-Tone |
| #7 Polish | #39 Turkish |
| #8 Super-Locrian | #40 Hungarian-minor |
| #9 Chromatic Hypophrygian, Asc. | #41 Chromatic Hypodorian, Asc. |
| #10 Raga Todi | #42 Greek |
| #11 Byzantine | #43 Greek |
| #12 Locrian | #44 Roumanian-minor |
| #13 Hijazi | #45 Half-Diminished |
| #14 Neapolitan-minor | #46 Zangula |
| #15 Phrygian | #47 Harmonic minor |
| #16 Javanese | #48 Ptolemy's Mixed Hypodorian |
| #17 Marava | #49 Natural minor |
| #18 Blues | #50 Dorian |
| #19 Enigmatic | #51 Lydian |
| #20 Chromatic Hypolydian, Asc. | #52 Lydian-Augmented |
| #21 India | #53 Leading Whole-Tone |
| #22 Hungarian-Major | #54 Lydian-minor |
| #23 Chromatic Lydian, Asc. | #55 Overtone |
| #24 Enigmatic, Descending-Inverted | #56 Ionian-Augmented |
| #25 Chromatic Phrygian, Asc. | #57 Locrian-Major |
| #26 Persian | #58 Zenkla |
| #27 Rahawi | #59 Rummel-Meia |
| #28 Oriental | #60 Harmonic-Major |
| #29 Persian | #61 Hindustan |
| #30 Double Harmonic | #62 Mixolydian |
| #31 Spanish | #63 Negro Spiritual |
| #32 Roumanian-Major | |
-

#1 Major

MAJOR

7-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$

Formula: M -1- M

Modal Series Scale Point Tone: MS 7-I:3

Backward: #15 Phrygian

Backward MS:SPT: MS 7-I:5

Alternate Names:

Ancient Greek: Lydian

A rayray (Ethiopia)

Authentic: 11th Mode (if Locrian omitted)
13th Mode (if Locrian included)

Bilaval (Hindu)

C Diatonic Mode

C Mode

Chahargah (Persian)

Chih 7-Tone (China)

Church Mode

Diatonic C Mode

Ecclesiastical Modes:

11th Authentic (if Locrian omitted)

13th Authentic (if Locrian included)

6th Plagal

Hyperlocrian

Hypolydian

Iastian

Ionian

Jazz Scale against Major 7th chord

Le Maire's Heptachord

Lydian (Ancient Greek)

Mahur (Persian)

MAJOR

Major Mode

Meia (Arabic)

(cont'd)

#1 Major (cont'd)

MAJOR (cont'd)

7-Tones

Alternate Names (cont'd):

Mode of C
 Pelog (7-Tone) (Java)
 Plagal: 6th Mode
 Ryo Scale: Sojo (on G) (Japan)
 Sojo on G
 Rast Panjgah
 Shadja (Hindu)
 Sojo (Ryo on G)
 Sojo (Togaku Mode, System I)
 Togaku Mode, System I: Sojo on G
 Zarlino

Altered:

5-Tone	...	#178	Hirajoshi #3	= Major 2omit 5omit
		#180	Pelog #5	= Major 2omit 6omit
		#182	Bulgarian	= Major 2omit 7omit
		#189	Semi. Pent. #5	= Major 3omit 6omit
		#192	Pentatonic #1	= Major 3omit 7omit
		#194	India	= Major 4omit 6omit
		#197	Pentatonic #3	= Major 4omit 7omit
		#198	African	= Major 5omit 7omit
6-Tone	...	#86	Ionian 6-Tn	= Major 3omit
		#96	Scotch	= Major 4omit
		#103	Guido's	= Major 7omit
8-Tone	...	#104	Hindu	= Major 2- 2
		#131	Ryo 8-Tone	= Major 4 4+
		#134	Bop Scale	= Major 6- 6
		#136	Mixolydian 8-Tn	= Major 7- 7
9-Tone	...	#140	Hindu	= Major 2- 2 4 4+
		#143	Bartok's 9-Tn	+ Major 3- 3 5- 5
		#145	Dorian 9-Tone	= Major 3- 3 7- 7
		#147	Ryo 9-Tone	= Major 4 4+ 7- 7

(cont'd)

#1 Major (cont'd)

MAJOR (cont'd)

7-Tones

Ethnic Uses:

Algeria
 Appalachian Mts.
 Arabia
 Basque
 Britain
 China
 Czechoslovakia
 Denmark
 England
 Ethiopia
 France
 Galicia
 Germany
 Greece, Ancient
 Greece, modern
 Hungary
 India (Hindu)
 Ireland
 Italy
 Japan
 Java
 Jewish
 Mexico, modern
 Mongolia
 Persia
 Poland
 Russia
 Spain
 Wales

**C D E F G A B c
 D \flat E \flat F G \flat A \flat B \flat C d \flat
 D E F \sharp G A B C \sharp d
 E \flat F G A \flat B \flat C D e \flat
 E F \sharp G \sharp A B C \sharp D \sharp e
 *F G A B \flat C D E f
 F \sharp G \sharp A \sharp B C \sharp D \sharp F f \sharp
 *G A B C D E F \sharp g
 A \flat B \flat C D \flat E \flat F G a \flat
 A B C \sharp D E F \sharp G \sharp a
 B \flat C D E \flat F G A b \flat
 B C \sharp D \sharp E F \sharp G \sharp A \sharp b

Source:

New International Encyclopaedia,
 Volume 16, page 61

*Uses only white keys on piano except for one note

**Uses only (and all) white keys on the piano

#2 Major 2-

ANANDA (Hindu)

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- 1 - $1-\frac{1}{2}$

Formula: mH -1- M

Modal Series Scale Point Tone: MS 7-X:3

Backward: #14 Neapolitan-minor

Backward MS:SPT: MS 7-IX:5

Alternate Names:

ANANDA

Hindu

Altered:

5-Tone	...	#165	Japan. Pent. #4	=	Ananda 3omit 7omit
		#177	Scriabin	=	Ananda 4omit 7omit
		#178	Hirajoshi #3	=	Ananda 2omit 5omit
		#180	Pelog #5	=	Ananda 2omit 6omit
		#182	Bulgarian	=	Ananda 2omit 7omit
8-Tone	...	#104	Hindu	=	Ananda 2 2+
9-Tone	...	#140	Hindu	=	Ananda 2 2+ 4 4+

Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 121

C	D \flat	E	F	G	A	B	c
D \flat	D	F	G \flat	A \flat	B \flat	C	d \flat
D	E \flat	F \sharp	G	A	B	C \sharp	d
E \flat	E	G	A \flat	B \flat	C	D	e \flat
E	F	G \sharp	A	B	C \sharp	D \sharp	e
F	G \flat	A	B \flat	C	D	E	f
F \sharp	G	A \sharp	B	C \sharp	D \sharp	F	F \sharp
G	A \flat	B	C	D	E	F \sharp	g
A \flat	A	C	D \flat	E \flat	F	G	a \flat
A	B \flat	C \sharp	D	E	F \sharp	G \sharp	a
B \flat	B	D	E \flat	F	G	A	b \flat
B	C	D \sharp	E	F \sharp	G \sharp	A \sharp	b

#3 Major 2- 2 3+ 4+ 6+ 7omit

CHROMATIC MIXOLYDIAN, ASC.

7-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ -1

Formula: (3) $-\frac{1}{2}$ - (5)

Modal Series Scale Point Tone: MS 7-V:6

Backward: --- Major 3+ 4+ 6+; (10)- $\frac{1}{2}$ -(13)

Backward MS:SPT: Ms 7-VI:2

Modern "Spelling":

Major 2- 3 b b 5- 6 b b 7-

Alternate Names:

Ancient Greek, Chromatic Mixolydian

CHROMATIC MIXOLYDIAN (Asc.)

Ethnic Uses:

Greece, Ancient

Source:

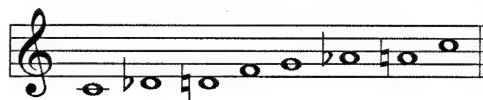
Vincent, page 157

C	D \flat	D	F	G \flat	G	B \flat	c
D \flat	D	E \flat	G \flat	G	A \flat	B	d \flat
D	D \sharp	E	G	G \sharp	A	C	d
E \flat	E	F	A \flat	A	B \flat	D \flat	e \flat
E	F	G \flat	A	B \flat	B	D	e
F	F \sharp	G	A \sharp	B	C	D \sharp	f
G \flat	G	A \flat	B	C	D \flat	E	g \flat
G	A \flat	A	C	D \flat	D	F	g
A \flat	A	B \flat	C \sharp	D	E \flat	F \sharp	a \flat
A	A \sharp	B	D	D \sharp	E	G	a
B \flat	B	C	D \sharp	E	F	A \flat	b \flat
B	C	D \flat	E	F	G \flat	A	b

#4 Major 2- 2 3omit 6- 6 7omit

CHROMATIC DORIAN, ASC.

7-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$

Formula: (3) -1- (3)

Modal Series Scale Point Tone: MS 7-V:2

Backward: --- Major 2+ 6+; (13) -1- (13)

Backward MS:SPT: MS 7-VI:6

Modern "Spelling":

Major 2- 3 \flat 6- 7 \flat

Alternate Names:

Ancient Greek, Chromatic Dorian

CHROMATIC DORIAN (Asc.)

India

Mukhari

Altered:

5-Tone ... #162 Hirajoshi #4 = Chrm Dorian 2om 6om

Ethnic Uses:

Greece, Ancient

India

Source:

Vincent, page 157

C	D \flat	D	F	G	A \flat	A	c
D \flat	D	E \flat	F \sharp	G \sharp	A	B \flat	d \flat
D	E \flat	E	G	A	B \flat	B	d
E \flat	E	F	A \flat	B \flat	B	C	e \flat
E	F	G \flat	A	B	C	D \flat	e
F	G \flat	G	B \flat	C	D \flat	D	f
G \flat	G	A \flat	B	C \sharp	D	E \flat	g \flat
G	A \flat	A	C	D	E \flat	E	g
A \flat	A	B \flat	D \flat	E \flat	E	F	a \flat
A	A \sharp	B	D	E	F	F \sharp	a
B \flat	B	C	E \flat	F	G \flat	G	b \flat
B	C	D \flat	E	F \sharp	G	A \flat	b

#5 Major [2/2+] 7-

JEWISH

7-Tones



Intervals: $[1-1-\frac{1}{2}/1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}]$ -1- $1-\frac{1}{2}-1$

Formula: $[M/(13)]$ -1- m

Combination of:

#62 Mixolydian (Major 7-)

#32 Roumanian-Major (Major 2+ 7-)

Modal Series Scale Point Tone:

#62 = MS 7-I:7

#32 = MS 7-XIII:1

Backward:

#62 = #49 Natural minor

#32 = #48 Ptolemy's

Backward MS:SPT:

#62 = #49 = MS 7-I:1

#32 = #48 = MS 7-XIV:1

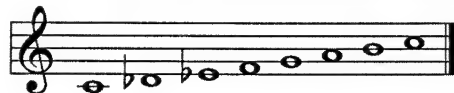
Ethnic Uses:

Jewish

#6 Major 2- 3-

NEAPOLITAN-MAJOR

7-Tones



Intervals: $\frac{1}{2}$ -1-1 -1- 1-1- $\frac{1}{2}$

Formula: mN -1- M

Modal Series Scale Point Tone: MS 7-III:4

Backward: #6 Neapolitan-Major (SAME)

Backward MS:SPT: MS 7-III:4 (SAME)

Altered:

- 5-Tone ... #165 Japan. Pent. #4 = Neap-Maj 3om 7om
 #166 Jazz min. Pent = Neap-Maj 2om 7om
 6-Tone ... #65 African = Neap-Maj 2omit
 #76 African = Neap-Maj 7omit
 9-Tone ... #137 Tcherepnin's = Neap-Maj 3 3+ 6- 6

Ethnic Uses: ---

Source:

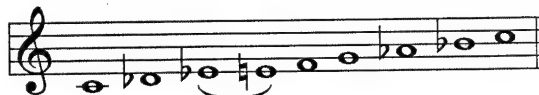
Persichetti, page 44

C	D \flat	E \flat	F	G	A	B	c
D \flat	D	E	F \sharp	G \sharp	A \sharp	C	d \flat
D	E \flat	F	G	A	B	C \sharp	d
E \flat	E	G \flat	A \flat	B \flat	C	D	e \flat
E	F	G	A	B	C \sharp	D \sharp	e
F	G \flat	A \flat	B \flat	C	D	E	f
F \sharp	G	A	B	C \sharp	D \sharp	F	f \sharp
G	A \flat	B \flat	C	D	E	F \sharp	g
A \flat	A	B	D \flat	E \flat	F	G	a \flat
A	B \flat	C	D	E	F \sharp	G \sharp	a
B \flat	B	D \flat	E \flat	F	G	A	b \flat
B	C	D	E	F \sharp	G \sharp	A \sharp	b

#7 Major 2- [3-/3] 6- 7-

POLISH

7-Tones



Intervals: $\left[\frac{1}{2}-1-1/\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}\right] -1- \frac{1}{2}-1-1$

Formula: $[mN/mH] -1- mN$

Combination of:

#15 Phrygian (Major 2- 3- 6- 7-)

#31 Spanish (Major 2- 6- 7-)

Modal Series Scale Point Tone:

#15 = MS 7-I:5

#31 = MS 7-VII:4

Backward:

#15 = #1 Major

#31 = #60 Harmonic-Major

Backward MS:SPT:

#15 = #1 = MS 7-I:3

#31 = #60 = MS 7-VIII:4

Ethnic Uses:

Poland

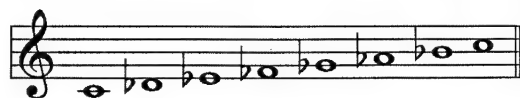
Source:

New Groves Dictionary of Music,
Volume 15, page 31

#8 Major 2- 3- 4- 5- 6- 7-

SUPER-LOCRIAN

7-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- 1-1-1

Formula: Dim -1- W

Modal Series Scale Point Tone: MS 7-II:6

Backward: #52 Lydian-Augmented

Backward MS:SPT: MS 7-II:2

Alternate Symbols:

Major 2- 3- 3 4omit

MAJOR 2- 3- 4- 5- 6- 7-

Alternate Names:

Altered Dominant

Busoni

Diminished Whole Tone

Doubly-Altered Locrian

Jazz Scale

SUPER-LOCRIAN

Altered:

5-Tone	...	#153	Semi. Pent. #4	=	Sup-Loc 4omit 7omit
		#154	Japanese	=	Sup-Loc 2omit 4omit
		#171	Japan. Pent. #3	=	Sup-Loc 2omit 5omit
6-Tone	...	#68	Locrian 6-Tone	=	Sup-Loc 4omit
8-Tone	...	#110	Espla's	=	Sup-Loc 4 4+
		#113	Composite #1	=	Sup-Loc 5 5+

C D \flat E \flat F G A \flat B \flat c
 *D \flat D E F G A B d \flat
 D E \flat F G \flat A \flat B \flat C d
 E \flat E F \sharp G A B D \flat e \flat
 E F G A \flat B \flat C D e
 F G \flat A \flat A B D \flat E \flat f
 F \sharp G A B \flat C D E f \sharp
 G A \flat B \flat B D \flat E \flat F g
 A \flat A B C D E G \flat a \flat
 A B \flat C D \flat E \flat F G a
 B \flat B C \sharp D E F \sharp A \flat b \flat
 *B C D E \flat F G A b

Ethnic Uses:

Spanish

Used by:

Busoni in "Fantasia Contrapuntistica"

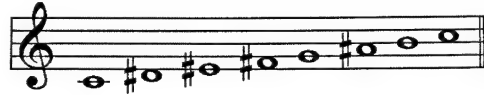
Source:

Persichetti, page 44

*Uses only white keys on the piano except for one note

#9 Major 2+ 3+ 4+ 6+

CHROMATIC HYPOPHYRYGIAN, ASC. 7-Tones



Intervals: $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$

Formula: (15) $-\frac{1}{2}$ - (13)

Modal Series Scale Point Tone: MS 7-V:4

Backward: --- [Major 2- 2 3+ 4+ 7omit]
[(3) $-\frac{1}{2}$ - (4)]

Backward MS:SPT: MS 7-VI:4

Alternate Names:

Ancient Greek Chromatic Hypophrygian
CHROMATIC HYPOPHYRYGIAN (Asc.)

Ethnic Uses:

Greece, Ancient

Source:

Vincent, page 157

C	D#	F	F#	G	A#	B	c
D \flat	E	F#	G	A \flat	B	C	d \flat
D	F	G	A \flat	A	C	D \flat	d
E \flat	F#	G#	A	B \flat	C#	D	e \flat
E	G	A	B \flat	B	D	E \flat	e
F	G#	A#	B	C	D#	E	f
G \flat	A	B	C	D \flat	E	F	g \flat
G	B \flat	C	D \flat	D	F	F#	g
A \flat	B	C#	D	E \flat	F#	G	a \flat
A	C	D	E \flat	E	G	A \flat	a
B \flat	C#	D#	E	F	G#	A	b \flat
B	D	E	F	G \flat	A	B \flat	b



Formula: (4) $-1/2-$ mH

Backward MS:SPT: MS 7-V:7

Todi

5-Tone	...	#153	Semi. Pent. #4	= Raga Todi 5omit 7omit
		#155	Pelog #1	= Raga Todi 4omit 7omit
6-Tone	...	#67	Vilasakhani	= Raga Todi 5omit

India (Hindu)

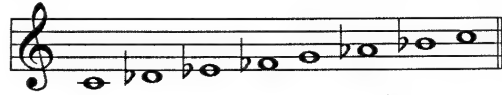
Danielou #2, page 232

C	D \flat	E \flat	F \sharp	G	A \flat	B	c
D \flat	D	E	G	A \flat	A	C	d \flat
D	E \flat	F	G \sharp	A	B \flat	C \sharp	d
E \flat	E	F \sharp	A	B \flat	B	D	e \flat
E	F	G	A \sharp	B	C	D \sharp	e
F	G \flat	A \flat	B	C	D \flat	E	f
G \flat	G	A	C	D \flat	D	F	g \flat
G	A \flat	B \flat	C \sharp	D	E \flat	F \sharp	g
A \flat	A	B	D	E \flat	E	G	a \flat
A	B \flat	C	D \sharp	E	F	G \sharp	a
B \flat	B	D \flat	E	F	G \flat	A	b \flat
B	C	D	F	F \sharp	G	A \sharp	b

#11 Major 2- 3- 4- 6- 7-

BYZANTINE

7-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1-1

Formula: Dim -1 $\frac{1}{2}$ - mN

Modal Series Scale Point Tone: MS 7-VIII:6

Backward: #56 Ionian-Augmented

Backward MS:SPT: MS 7-VII:2

Altered:

- 5-Tone ... #155 Pelog #1 = Byzantine 4omit 7omit
 #171 Japan. Pent. #3 = Byzantine 2omit 5omit
 8-Tone ... #111 Spanish 8-Tone = Byzantine 4 4+
 #113 Composite #1 = Byzantine 5- 5

Ethnic Uses:

Byzantia

Source:

Grove Dictionary of Music,
 Volume I, page 1074

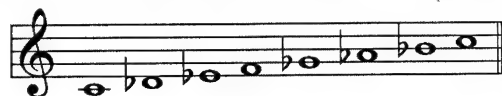
C	D \flat	E \flat	E	G	A \flat	B \flat	c
C \sharp	D	E	F	G \sharp	A	B	c \sharp
D	E \flat	F	G \flat	A	B \flat	C	d
E \flat	E	F \sharp	G	A \sharp	B	D \flat	e \flat
*E	F	G	A \flat	B	C	D	e
F	G \flat	A \flat	A	C	D \flat	E \flat	f
F \sharp	G	A	B \flat	C \sharp	D	E	f \sharp
G	A \flat	B \flat	B	D	E \flat	F	g
A \flat	A	B	C	D \sharp	E	F \sharp	a \flat
A	B \flat	C	D \flat	E	F	G	a
B \flat	B	C \sharp	D	F	G \flat	A \flat	b \flat
B	C	D	E \flat	F \sharp	G	A	b

*Uses only white keys on piano except for one note

#12 Major 2- 3- 5- 6- 7-

LOCRIAN

7-Tones



Intervals: $\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - 1-1-1

Formula: mN $-\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 7-I:2

Backward: #51 Lydian

Backward MS:SPT: MS 7-I:6

Alternate Names:

Ancient Greek: Hyperdorian
Mixolydian

Authentic 11th Mode

B Diatonic Mode

B Mode

Banshikicho (Japanese)

Busalik (Arabic)

Church Mode

Diatonic B Mode

Ecclesiastical Mode:

11th Authentic Mode

4th Plagal Mode

Hindu

Husayni (Arabic)

Hyperaeolian

Hyperdorian (Ancient Greek)

Hypophrygian

LOCRIAN

L'sain

Mixolydian (Ancient Greek)

Mode of B

Plagal 4th Mode

Saika (Arabic)

Sihgah (Persian)

(cont'd)

#12 Major 2- 3- 5- 6- 7-(cont'd)

LOCRIAN (cont'd)

7-Tones

Altered:

5-Tone	...	#153	Semi. Pent. #4	=	Locrian 4omit 7omit
		#154	Japanese	=	Locrian 2omit 4omit
		#156	Pelog #4	=	Locrian 3omit 7omit
		#157	Hirajoshi #2	=	Locrian 3omit 6omit
		#158	Pentatonic #5	=	Locrian 2omit 5omit
		#159	Kumoi #5	=	Locrian 2omit 6omit
		#160	Javanese	=	Locrian 5omit 7omit
6-Tone	...	#68	Locrian 6-Tone	=	Locrian 4omit
		#71	Abuselik	=	Locrian 3omit
		#72	Phrygian 6-Tone	=	Locrian 5omit
8-Tone	...	#105	Locrian 8-Tn #1	=	Locrian 2 2+
		#110	Espla's	=	Locrian 3 3+
		#114	Locrian 8-Tn #2	=	Locrian 5 5+
		#116	'Iraq	=	Locrian 7 7+
9-Tone	...	#138	Locrian 9-Tone	=	Locrian 2 2+ 5 5+

Ethnic Uses:

Arabic

Greece, Ancient (rather rare)

Greece, Modern (rather rare)

Iceland

India (Hindu)

Japan

Persia

Portugal (used as ascending scale combined
with #15 Phrygian descending)

Scotland

Sweden (rare)

Used by:

Debussy

Source:

New International Encyclopaedia,
Volume 16, page 61**NOTE:** Sometimes omitted as Ecclesiastical Scale

C D \flat E \flat F G \flat A \flat B \flat c
 C \sharp D E F \sharp G A B c \sharp
 D E \flat F G A \flat B \flat C d
 D \sharp E F \sharp G \sharp A B C \sharp d \sharp
 *E F G A B \flat C D e
 F G \flat A \flat B \flat B D \flat E \flat f
 *F \sharp G A B C D E f \sharp
 G A \flat B \flat C D \flat E \flat F g
 A \flat A B C \sharp D E F \sharp a \flat
 A B \flat C D E \flat F G a
 B \flat B C \sharp D \sharp E F \sharp G \sharp b \flat
 **B C D E F G A b

*Uses only white keys on
piano except one note

**Uses only (and all) white keys
on piano

#13 Major 2- 3- 5- 7-

HIJAZI

7-Tones



Intervals: $\frac{1}{2}$ -1-1 $-\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1

Formula: mN $-\frac{1}{2}$ - (14)

Modal Series Scale Point Tone: MS 7-VII:1

Backward: #37 Lydian-Diminished

Backward MS:SPT: MS 7-VIII:7

Alternate Names:

Arabic
Greek
Hidshaf
HIJAZI

Altered:

5-Tone	...	#157	Hirajoshi #2	=	Hijazi 3omit 6omit
		#159	Kumoi #5	=	Hijazi 2omit 6omit
		#161	Semi. Pent. #1	=	Hijazi 2omit 5omit
6-Tone	...	#69	Hidshaf	=	Hijazi 4omit

Ethnic Uses:

Arabic
Greek

C	D \flat	E \flat	F	G \flat	A	B \flat	c
D \flat	D	E	F \sharp	G	A \sharp	B	d \flat
D	E \flat	F	G	A \flat	B	C	d
E \flat	E	F \sharp	G \sharp	A	C	D \flat	e \flat
E	F	G	A	B \flat	C \sharp	D	e
F	G \flat	A \flat	B \flat	B	D	E \flat	f
F \sharp	G	A	B	C	D \sharp	E	f \sharp
G	A \flat	B \flat	C	D \flat	E	F	g
A \flat	A	B	C \sharp	D	F	G \flat	a \flat
A	B \flat	C	D	E \flat	F \sharp	G	a
B \flat	B	C \sharp	D \sharp	E	G	A \flat	b \flat
*B	C	D	E	F	G \sharp	A	b

Source:

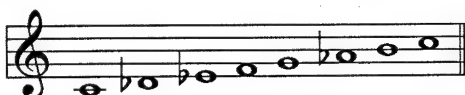
Harvard Dictionary of Music, page 47

*Uses only white keys on piano except for one note

#14 Major 2-3-6-

NEAPOLITAN-MINOR

7-Tones



Intervals: $\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$

Formula: mN -1- mH

Modal Series Scale Point Tone: MS 7-IX:5

Backward: #2 Ananda

Backward MS:SPT: MS 7-X:3

Alternate Names:

Neapolitan

NEAPOLITAN MAJOR

Altered:

5-Tone	...	#155	Pelog #1	= Neap-min. 4omit 7omit
		#160	Javanese	= Neap-min. 5omit 7omit
		#162	Hirajoshi #4	= Neap-min. 3omit 7omit
6-Tone	...	#70	Gujari	= Neap-min. 5omit
		#74	Samanta	= Neap-min. 7omit
9-Tone	...	#137	Tcherepnin	= Neap-min. 3 3+ 6 6+

Ethnic Uses: ---

Source:

Colin, page 310

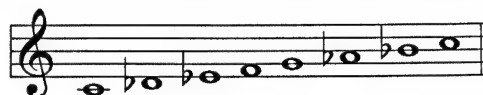
C	D \flat	E \flat	F	G	A \flat	B	c
D \flat	D	E	F \sharp	G \sharp	A	C	d \flat
D	E \flat	F	G	A	B \flat	C \sharp	d
E \flat	E	F \sharp	G \sharp	A \sharp	B	D	e \flat
*E	F	G	A	B	C	D \sharp	e
F	G \flat	A \flat	B \flat	C	D \flat	E	f
F \sharp	G	A	B	C \sharp	D	F	g \sharp
G	A \flat	B \flat	C	D	E \flat	F \sharp	g
A \flat	A	B	C \sharp	D \sharp	E	F	a \flat
A	B \flat	C	D	E	F	A \flat	a
B \flat	B	D \flat	E \flat	F	G \flat	A	b \flat
B	C	D	E	F \sharp	G	A \sharp	b

*Uses only white keys on piano except for one note

#15 Major 2- 3- 6- 7-

PHRYGIAN

7-Tones



Intervals: $\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ -1-1

Formula: mN -1- mN

Modal Series Scale Point Tone: MS 7-I:5

Backward: #1 Major

Backward MS:SPT: MS 7-I:3

Alternate Names:

Ancient Greek Dorian
 Authentic 3rd Mode
 Bhairavi (Hindu)
 Church Mode
 Deuterios (Ecclesiastical Mode)
 Diatonic E Mode
 Dorian, Ancient Greece
 E Diatonic Mode
 E Mode
 Ecclesiastical Mode:
 3rd Authentic Mode
 10th Plagal Mode
 Deuterios
 Hindu
 Hyojo (Japanese)
 Hyperdorian
 Hypoaeolian
 In Scale, 7-Tone (Japanese)
 Jazz Scale against minor 7 chord
 Mezmoum (Arabic)
 Minor Mode
 Mode of E
 PHRYGIAN
 Plagal 10th Mode
 Raga Hanuma Todi (Hindu)

(cont'd)

#15 Major 2- 3- 6- 7- (cont'd)

PHRYGIAN (cont'd)

7-Tones

Altered:

5-Tone	...	#155	Pelog #1	= Phrygian 4omit 7omit
		#158	Pentatonic #5	= Phrygian 2omit 5omit
		#160	Javanese	= Phrygian 5omit 7omit
		#162	Hirajoshi #4	= Phrygian 3omit 7omit
		#163	Kumoi #2	= Phrygian 3omit 6omit
		#164	Pentatonic #2	= Phrygian 2omit 6omit
6-Tone	...	#72	Phrygian 6-Tone	= Phrygian 5omit
		#73	In Scale	= Phrygian 3omit
		#74	Samanta	= Phrygian 7omit
		#75	Irish	= Phrygian 2omit
8-Tone	...	#106	Phrygian 8-Tn #1	= Phrygian 2 2+
		#111	Spanish 8-Tone	= Phrygian 3 3+
		#114	Locrian 8-Tn #2	= Phrygian 4 4+
		#114	Locrian 8-Tn #2	= Phrygian 5- 5
		#117	Phrygian 8-Tn #2	= Phrygian 6 6+
9-Tone	...	#138	Locrian 9-Tone	= Phrygian 2 2+ 5- 5
		#139	Phrygian 9-Tn	= Phrygian 2 2+ 6 6+

Ethnic Uses:

African-American Slaves	Japan
Andalusia, Spain	Jewish
Arabia	Morocco
Bulgaria	Naples, Italy
Castile, Spain	Netherlands
China	Persia
Czechoslovakia	Poland (rare)
France	Portugal (desc., with
Galicia, Spain	#12 Locrian asc.)
Germany	Russia
Greece, Ancient	Scotland
Greece, Modern(not much)	Slovakia
Hungary (rare)	Spain (General)
India (Hindu)	Turkey
Ireland	Yugoslavia
Italy	

C D \flat E \flat F G A \flat B \flat c
 D \flat D E F \sharp G \sharp A B d \flat
 D E \flat F G A B \flat C d
 E \flat E G \flat A \flat B \flat B D \flat e \flat
 **E F G A B C D e
 F G \flat A \flat B \flat C D \flat E \flat f
 F \sharp G A B C \sharp D E f \sharp
 G A \flat B \flat C D E \flat F g
 A \flat A B C \sharp D \sharp E G \flat a \flat
 *A B \flat C D E F G a
 B \flat B D \flat E \flat F G \flat A \flat b \flat
 *B C D E F \sharp G A b

Used by:

Rimsky-Korsakov

Source:

New International Encyclopaedia,
 Volume 16, page 61

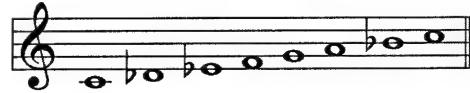
*Uses only white keys on piano except one note

**Uses only (and all) white keys on piano

#16 Major 2- 3- 7-

JAVANESE

7-Tones



Intervals: $\frac{1}{2}$ -1-1 -1- 1- $\frac{1}{2}$ -1

Formula: mN -1- m

Modal Series Scale Point Tone: MS 7-II:1

Backward: #34 Melodic minor

Backward MS:SPT: MS 7-II:7

Alternate Names:

Dorian 2-

JAVANESE

Rasd (Arabic)

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|----------------------|
| 5-Tone | ... | #161 | Semi. Pent. #1 | = | Javanese 2omit 5omit |
| | | #163 | Kumoi #2 | = | Javanese 3omit 6omit |
| | | #164 | Pentatonic #2 | = | Javanese 2omit 6omit |
| | | #165 | Japan. Pent. #4 | = | Javanese 3omit 7omit |
| | | #166 | Jazz min. Pent. | = | Javanese 2omit 7omit |
| 6-Tone | ... | #76 | African | = | Javanese 7omit |
| | | #77 | Dorian 6-Tone | = | Javanese 2omit |
| 8-Tone | ... | #112 | Latin American | = | Javanese 3 3+ |
| | | #117 | Phrygian 8-T#2 | = | Javanese 6- 6 |
| 9-Tone | ... | #139 | Phrygian 9-Tn | = | Javanese 2 2+ 6- 6 |

C D \flat E \flat F G A B \flat c
 D \flat D E G \flat A \flat B \flat B d \flat
 *D E \flat F G A B C d
 E \flat E G \flat A \flat B \flat C D \flat e \flat
 *E F G A B C \sharp D e
 F G \flat A \flat B \flat C D E \flat f
 F \sharp G A B C \sharp D \sharp E f \sharp
 G A \flat B \flat C D E F g
 A \flat A B D \flat E \flat F G \flat a \flat
 A B \flat C D E F \sharp G a
 B \flat B D \flat E \flat F G A \flat b \flat
 B C D E F \sharp G \sharp A b

Ethnic Uses:

Arabia

Java

Persia

Sicily

Source:

Colin, page 310

*Uses only white keys on piano except for one note

#17 Major 2- 4+

MARAVA (Hindu)

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$

Formula: (5) $-\frac{1}{2}$ - M

Modal Series Scale Point Tone: MS 7-XIV:6

Backward: --- [Major 2- 3- 5- 6-]
[mN- $\frac{1}{2}$ -(10)]

Backward MS:SPT: MS 7-XIII:3

Alternate Names:

Hindu

MARAVA

Altered:

5-Tone	...	#167 Kumoi #3	= Marava 2omit 5omit
		#172 Vibhasa	= Marava 5omit 7omit
		#173 Hirajoshi #5	= Marava 2omit 6omit
		#177 Scriabin	= Marava 4omit 7omit
6-Tone	...	#78 Panchana	= Marava 5omit
8-Tone	...	#107 Hindu	= Marava 2 2+
		#118 Buzurg	= Marava 4- 4
		#119 Scotch Bagpipe	= Marava 9+
9-Tone	...	#140 Hindu	= Marava 2 2+ 4- 4
		#141 Hindu	= Marava 2 2+ 6- 6

C D \flat E F \sharp G A B c
D \flat D F G A \flat B \flat C d \flat
D E \flat F \sharp G \sharp A B C \sharp d
E \flat E G A B \flat C D e \flat
E F G \sharp A \sharp B C \sharp D \sharp e
*F G \flat A B C D E f
G \flat G B \flat C D \flat E \flat F g \flat
G A \flat B C \sharp D E F \sharp g
A \flat A C D E \flat F G a \flat
A B \flat C \sharp D \sharp E F \sharp G \sharp a
*B \flat B D E F G A b \flat
B C E \flat F G \flat A \flat B \flat b

Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 59

*Uses only white keys on piano except one note

#18 Major 2+ 4 4+ 6omit 7-

BLUES

7-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1

Formula: (13) $-\frac{1}{2}$ (5)

Modal Series Scale Point Tone: MS 7-XV:1

Backward: --- [Major 3+ 4+ 6- 6 7omit]
[(10 $-\frac{1}{2}$ (3))]

Backward MS:SPT: ---

Alternate Names:

BLUES

Jazz Scale (against Dominant 7th chord)

Alternate Symbols:

Major 2omit 3- 3 4 4+ 6omit 7-

MAJOR 2+ 4 4+ 6omit 7-

Major 2+ 5- 5 6omit 7-

Major 2+ 5- 6b 7-

Altered:

5-Tone ... #159 Kumoi #5 = Blues 3omit 5omit
#169 Diminished Pent.= Blues 4omit 4+ 5omit
#174 Pent.-Dominant = Blues 4omit 4+omit
6-Tone ... #66 Blues = Blues 3omit

C D# E F F# G Bb c
Db E F Gb G Ab B db
D F F# G G# A C d
Eb F# G Ab A Bb Db eb
E G G# A A# B D e
F Ab A Bb B C Eb f
Gb A Bb B C Db E gb
G A# B C C# D F g
Ab B C Db D Eb Gb ab
A C C# D D# E G a
Bb C# D Eb E F Ab bb
B D D# E F Gb A b

Ethnic Uses:

Black Americans (USA)

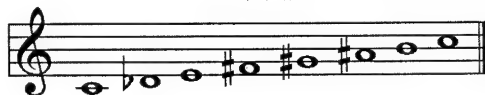
Source:

Middlebrook, page 93

#19 Major 2- 4+ 5+ 6+

ENIGMATIC (Ascending)

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 -1- $1-\frac{1}{2}-\frac{1}{2}$

Formula: (5) -1- (7)

Modal Series Scale Point Tone: MS 7-XVI:1

Backward: [Major 2- 2 4+ 5om 6-; (2)-1-(10)]

Backward MS:SPT: ---

Alternate Names:

ENIGMATIC (Ascending)

Enigmatic Scale of Verdi

Verdi's Enigmatic Scale (Ascending)

Altered:

5-Tone ... #168 Japan. Pent. #5 = Enigmtc. 2omit 6omit

Ethnic Uses: ---

Used by: Verdi

NOTE: Combined with #24 Enigmatic, Descending-Inverted

Source:

Slonimsky, page 145

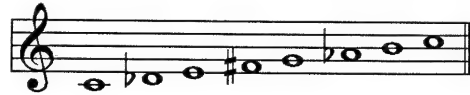
C	D \flat	E	F \sharp	G \sharp	A \sharp	B	c
*D \flat	D	F	G	A	B	C	d \flat
D	E \flat	F \sharp	A \flat	B \flat	C	C \sharp	d
E \flat	E	G	A	B	C \sharp	D	e \flat
E	F	A \flat	B \flat	C	D	E \flat	e
F	G \flat	A	B	C \sharp	D \sharp	E	f
F \sharp	G	A \sharp	C	D	E	F	f
G	A \flat	B	D \flat	E \flat	F	F \sharp	g
A \flat	A	C	D	E	F \sharp	G	a
A	B \flat	D \flat	E \flat	F	G	A \flat	a
B \flat	B	D	E	F \sharp	G \sharp	A	b
B	C	D \sharp	F	G	A	A \sharp	b

*Uses only white keys on piano except one note

#20 Major 2- 4+ 6-

CHROMATIC HYPOLYDIAN, ASC.

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 $-\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$

Formula: (5) $-\frac{1}{2}$ - mH

Modal Series Scale Point Tones: MS 7-V:3

Backward: #26 Persian

Backward MS:SPT: MS 7-VI:5

Alternate Names:

Ancient Greek, Chromatic Hypolydian

CHROMATIC HYPOLYDIAN (Asc.)

Shri (Hindu)

Altered:

5-Tone	...	#168	Japan. Pent. #5	=	Ch. Hypolyd. 2om 5om
		#173	Hirajoshi #5	=	Ch. Hypolyd. 2om 6om
		#175	Rewa	=	Ch. Hypolyd. 4om 7om
6-Tone	...	#81	Comb.-Altered	=	Ch. Hypolyd. 7omit
9-Tone	...	#141	Hindu	=	Ch Hypolyd 2 2+ 6 6+

Ethnic Uses:

Greece, Ancient

India (Hindu)

Source:

Vincent, page 157

C	D \flat	E	F \sharp	G	A \flat	B	c
D \flat	D	F	G	A \flat	A	C	d \flat
D	E \flat	F \sharp	G \sharp	A	B \flat	C \sharp	d
E \flat	E	G	A	B \flat	B	D	e \flat
E	F	G \sharp	A \sharp	B	C	D \sharp	e
F	G \flat	A	B	C	D \flat	E	f
F \sharp	G	A \sharp	C	C \sharp	D	F	f \sharp
G	A \flat	B	C \sharp	D	E \flat	F \sharp	g
A \flat	A	C	D	E \flat	E	G	a \flat
A	B \flat	C \sharp	D \sharp	E	F	G \sharp	a
B \flat	B	D	E	F	G \flat	A	b \flat
B	C	D \sharp	F	F \sharp	G	A \sharp	b

#21 Major 2- 4+ 7-

INDIA

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 $-\frac{1}{2}$ - $1-\frac{1}{2}$ -1

Formula: (5) $-\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 7-XI:1

Backward: * --- [Major 3- 5- 6-; m- $\frac{1}{2}$ -(10)]

Backward MS:SPT: MS 7-XII:3

Alternate Names:

INDIA

Jazz Scale against Dominant 7th Chord

Altered:

- 5-Tone ... #170 Jazz Dom. Pent. = India 5omit 6omit
 #172 Vibhasa = India 5omit 7omit
 #176 Domin. Pent. = India 4omit 6omit
 #177 Scriabin = India 4omit 7omit
 6-Tone ... #79 Prometh. Neap. = India 5omit
 8-Tone ... #109 Diminished #2 = India 3- 3

Ethnic Uses:

India

Source:

Malm, page 76

C D \flat E F \sharp G A B \flat c
 D \flat D F G A \flat B \flat B d \flat
 D E \flat F \sharp G \sharp A B C d
 E \flat E G A B \flat C D \flat e \flat
 E F G \sharp A \sharp B C \sharp D e
 F G \flat A B C D E \flat f
 F \sharp G A \sharp C C \sharp D \sharp E f \sharp
 G A \flat B C \sharp D E F g
 A \flat A C D E \flat F G \flat a \flat
 A B \flat C \sharp D \sharp E F \sharp G a
 B \flat B D E F G A \flat b \flat
 B C D \sharp F F \sharp G \sharp A b

*This is my "missing scale #k", see page 317

#22 Major 2+ 4+ 7-

HUNGARIAN-MAJOR

7-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ -1 $-\frac{1}{2}$ - $1-\frac{1}{2}$ -1

Formula: (14) $-\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 7-XII:1

Backward: --- [Major 3- 5- 6- 6 7omit; m- $\frac{1}{2}$ -(8)]

Backward MS:SPT: MS 7-XI:3

Alternate Names:

Hungarian

HUNGARIAN-MAJOR

Roumanian

Altered:

- 5-Tone ... #169 Diminished. Pent.= Hung-Major 5omit 6omit
 #174 Pentatonic-Dom.= Hung-Major 4omit 6omit
 8-Tone ... #109 Diminished #2 = Hung-Major 1 1+
 9-Tone ... #142 Auxiliary Blues = Hung-Major 2- 2 4- 4

Ethnic Uses:

Hungary

Roumania

Source:

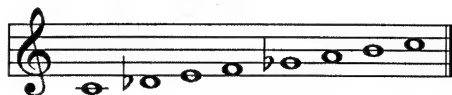
Colin, page 308

C	D#	E	F#	G	A	Bb	c
Db	E	F	G	Ab	Bb	B	db
D	F	F#	G#	A	B	C	d
Eb	F#	G	A	Bb	C	Db	eb
E	G	Ab	Bb	B	C#	D	e
F	G#	A	B	C	D	Eb	f
Gb	A	Bb	C	Db	Eb	E	gb
G	A#	B	C#	D	E	F	g
Ab	B	C	D	Eb	F	Gb	ab
A	C	C#	D#	E	F#	G	a
Bb	C#	D	E	F	G	Ab	bb
B	D	Eb	F	F#	G#	A	b

#23 Major 2- 5-

CHROMATIC LYDIAN, ASC.

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$

Formula: mH $-\frac{1}{2}$ - (15)

Modal Series Scale Point Tone: MS 7-V:7

Backward: #10 Raga Todi

Backward MS:SPT: MS 7-VI:1

Alternate Names:

Ancient Greek, Chromatic Lydian

CHROMATIC LYDIAN (Asc.)

Altered:

5-Tone	...	#178	Hirajoshi #3	=	Chr Lydian 2omit 5omit
6-Tone	...	#78	Panchana	=	Chr Lydian 4omit
8-Tone	...	#118	Buzurg	=	Chr Lydian 5 5+
		#120	Irak	=	Chr Lydian 6- 6
9-Tone	...	#140	Hindu	=	Chr Lydian 2 2+ 5 5+

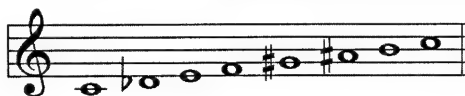
Ethnic Uses:

Ancient Greece

Source:

Vincent, page 157

C	D \flat	E	F	G \flat	A	B	c
D \flat	D	F	G \flat	G	B \flat	C	d \flat
D	E \flat	F \sharp	G	A \flat	B	C \sharp	d
E \flat	E	G	A \flat	A	C	D	e \flat
E	F	G \sharp	A	B \flat	C \sharp	D \sharp	e
F	G \flat	A	B \flat	B	D	E	f
F \sharp	G	A \sharp	B	C	D \sharp	F	f \sharp
G	A \flat	B	C	D \flat	E	F \sharp	g
A \flat	A	C	D \flat	D	F	G	a \flat
A	B \flat	C \sharp	D	E \flat	F \sharp	G \sharp	a
B \flat	B	D	E \flat	E	G	A	b \flat
B	C	D \sharp	E	F	G \sharp	A \sharp	b



Formula: $mH - 1\frac{1}{2} - (7)$

Backward: --- [Major 2- 2 4omit 6-; (2)-1½-mH]

Backward MS:SPT: ---

ENIGMATIC, DESCENDING-INVERTED

Verdi's Enigmatic Scale, Descending-Inverted

Ethnic Uses: ---

Used by: Verdi

Source:

Groves Dictionary of Music,
Volume VII, page 442

C	D \flat	E	F	A \flat	B \flat	B	c
D \flat	D	F	G \flat	A	B	C	d \flat
D	E \flat	F \sharp	G	A \sharp	C	C \sharp	d
E \flat	E	G	A \flat	B	C \sharp	D	e \flat
E	F	G \sharp	A	C	D	D \sharp	e
F	G \flat	A	B \flat	C \sharp	D \sharp	E	f
G \flat	G	A \sharp	B	D	E	F	g \flat
G	A \flat	B	C	E \flat	F	G \flat	g
A \flat	A	C	D \flat	E	F \sharp	G	a \flat
A	B \flat	C \sharp	D	F	G	G \sharp	a
B \flat	B	D	E \flat	F \sharp	G \sharp	A	b \flat
B	C	D \sharp	E	G	A	A \sharp	b

#25 Major 2+ 5+ 6+

CHROMATIC PHRYGIAN, ASC.

7-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$

Formula: (13) - $1\frac{1}{2}$ - (7)

Modal Series Scale Point Tone: MS 7-V:1

Backward: --- [Major 2- 2 4omit 6- 6 7omit]
[(2) - $1\frac{1}{2}$ - (3)]

Backward MS:SPT: MS 7-VI:7

Alternate Names:

Ancient Greek, Chromatic Phrygian
CHROMATIC PHRYGIAN (Asc.)

Altered:

5-Tone ... #158 Pentatonic #5 = Chr Phryg. 3omit 7omit
#171 Japan. Pent. #3 = Chr Phryg. 4omit 7omit

Ethnic Uses:

Ancient Greece

Source:

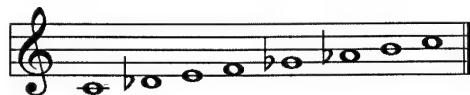
Vincent, page 157

C	D#	E	F	G#	A#	B	c
Db	E	F	Gb	A	B	C	db
D	F	F#	G	A#	C	C#	d
Eb	F#	G	Ab	B	C#	D	eb
E	G	G#	A	C	D	D#	e
F	G#	A	Bb	C#	D#	E	f
Gb	A	Bb	B	D	E	F	gb
G	A#	B	C	D#	F	F#	g
Ab	B	C	Db	E	F#	G	ab
A	C	C#	D	F	G	G#	a
Bb	C#	D	Eb	F#	G#	A	bb
B	D	D#	E	G	A	A#	b

#26 Major 2- 5- 6-

PERSIAN

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $1\frac{1}{2}$ - $\frac{1}{2}$

Formula: mH - $\frac{1}{2}$ - (10)

Modal Series Scale Point Tone: MS 7-VI:5

Backward: #20 Chromatic Hypolydian

Backward MS:SPT: MS 7-V:3

Altered:

5-Tone ... #156 Pelog #4 = Persian 3omit 7omit
8-Tone ... #120 Irak = Persian 6 6+

Ethnic Uses:

Persia

Source:

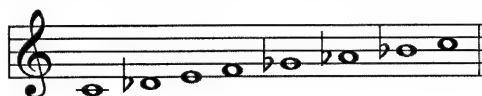
Danielou #2, page 102

C	D \flat	E	F	G \flat	A \flat	B	c
D \flat	D	F	G \flat	G	A	C	d \flat
D	E \flat	F \sharp	G	A \flat	B \flat	C \sharp	d
E \flat	E	G	A \flat	A	B	D	e \flat
E	F	G \sharp	A	B \flat	C	D \sharp	e
F	G \flat	A	B \flat	B	D \flat	E	f
F \sharp	G	A \sharp	B	C	D	F	f \sharp
G	A \flat	B	C	D \flat	E \flat	F \sharp	g
A \flat	A	C	D \flat	D	E	G	a \flat
A	B \flat	C \sharp	D	E \flat	F	G \sharp	a
B \flat	B	D	E \flat	E	G \flat	A	b \flat
B	C	D \sharp	E	F	G	A \sharp	b

#27 Major 2- 5- 6- 7-

RAHAWI (Arabic)

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1

Formula: mH - $\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 7-IX:2

Backward: --- [Major 4+ 6-; W- $\frac{1}{2}$ -mH]

Backward MS:SPT: MS 7-X:6

Alternate Names:

Arabic

Oriental

RAHAWI (Arabic)

Rhaoui (Arabic)

Altered:

5-Tone	...	#156	Pelog #4	=	Rahawi 3omit 7omit
		#157	Hirajoshi #2	=	Rahawi 3omit 6omit
6-Tone	...	#71	Abuselik	=	Rahawi 3omit
8-Tone	...	#110	Espla's	=	Rahawi 3- 3

Ethnic Uses:

Arabic

Oriental

Persian

Source:

Daniel, page 183

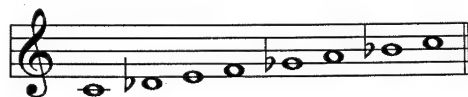
C D \flat E F G \flat A \flat B \flat c
 D \flat D F G \flat G A B d \flat
 D E \flat F \sharp G A \flat B \flat C d
 E \flat E G A \flat A B D \flat e \flat
 E F G \sharp A B \flat C D e
 F G \flat A B \flat B D \flat E \flat f
 F \sharp G A \sharp B C D E f \sharp
 G A \flat B C D \flat E \flat F g
 A \flat A C D \flat D E G \flat a \flat
 A B \flat C \sharp D E \flat F G a
 B \flat B D E \flat E G \flat A \flat b \flat
 *B C D \sharp E F G A b

*Uses only white keys on piano except for one note

#28 Major 2- 5- 7-

ORIENTAL

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1

Formula: mH - $\frac{1}{2}$ - (14)

Modal Series Scale Point Tone: MS 7-IV:1

Backward: #40 Hungarian-minor

Backward MS:SPT: MS 7-IV:7

Altered:

- 5-Tone ... #157 Hirajoshi #2 = Oriental 3omit 6omit
 #170 Jazz Dom. Pent. = Oriental 4omit 6omit
 #172 Vibhasa = Oriental 4omit 7omit
 6-Tone ... #79 Prometheus-Neap = Oriental 4omit

Ethnic Uses:

Oriental (Near East, General)

Source:

Persichetti, page 44

C	D \flat	E	F	G \flat	A	B \flat	c
D \flat	D	F	G \flat	G	A \sharp	B	d \flat
D	E \flat	F \sharp	G	A \flat	B	C	d
E \flat	E	G	A \flat	A	C	D \flat	e \flat
E	F	G \sharp	A	B \flat	C \sharp	D	e
F	G \flat	A	B \flat	B	D	E \flat	f
F \sharp	G	A \sharp	B	C	D \sharp	E	f \sharp
G	A \flat	B	C	D \flat	E	F	g
A \flat	A	C	D \flat	D	F	G \flat	a \flat
A	B \flat	C \sharp	D	E \flat	F \sharp	G	a
B \flat	B	D	E \flat	E	G	A \flat	b \flat
B	C	D \sharp	E	F	G \sharp	A	b

#29 Major 2+ 5+ 7-

PERSIAN

7-Tones



Intervals: $1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1$

Formula: (13) $-1\frac{1}{2}-$ (2)

Modal Series Scale Point Tone: MS 7-VI:3

Backward: #41 Chromatic Hypodorian

Backward MS:SPT: MS 7-V:5

Alternate Names:

Ispahan (Persian)

PERSIAN

Altered:

5-Tone ... #158 Pentatonic #5 = Persian 3omit 6omit
 #161 Semi. Pent.#1 = Persian 3omit 5omit
 #171 Japan. Pent. #3 = Persian 4omit 6omit
 #179 Pelog #3 = Persian 2omit 5omit

Ethnic Uses:

Persia

C	D#	E	F	G#	A	Bb	c
Db	E	F	Gb	A	Bb	B	db
D	F	F#	G	A#	B	C	d
Eb	F#	G	Ab	B	C	Db	eb
E	G	G#	A	C	C#	D	e
F	G#	A	Bb	C#	D	Eb	f
Gb	A	Bb	B	D	Eb	E	gb
G	A#	B	C	D#	E	F	g
Ab	B	C	Db	E	F	Gb	ab
A	C	C#	D	F	F#	G	a
Bb	C#	D	Eb	F#	G	Ab	bb
B	D	D#	E	G	G#	A	b

#30 Major 2- 6-

DOUBLE HARMONIC

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$

Formula: mH -1- mH

Modal Series Scale Point Tone: MS 7-IV:4

Backward: #30 Double Harmonic (same scale)

Backward MS:SPT: MS 7-IV:4 (same)

Alternate Names:

Ancient Greek, Neo-Chromatic

Bhairava (Hindu)

Byzantine

Chahargah

DOUBLE HARMONIC

Double Harmonic minor

Gypsy

Gypsy Minor

Hungarian

Neo-Chromatic (Ancient Greek)

Persian

Altered:

5-Tone	...	#162	Hirajoshi #4	=	Dbl. Harm. 3omit 7omit
		#180	Pelog #5	=	Dbl. Harm. 2omit 6omit
		#175	Rewa	=	Dbl. Harm. 4omit 7omit
6-Tone	...	#83	Bangala	=	Dbl. Harm. 7omit
9-Tone	...	#137	Tcherepnin's	=	Dbl. Harm. 3- 3 6 6+

(cont'd)

#30 Major 2- 6- (cont'd)

DOUBLE HARMONIC (cont'd)

7-Tones

Ethnic Uses:

Arabic
 Armenia
 Bulgaria (Old Church Singing)
 Byzantia
 Greece, Ancient
 Greece, Modern
 Gypsy
 Hungary
 India (Hindu)
 Jewish
 Oriental (Near East) (frequent)
 Persia

Source:

Persichetti, page 44

C	D \flat	E	F	G	A \flat	B	c
D \flat	D	F	G \flat	A \flat	A	C	d \flat
D	E \flat	F \sharp	G	A	B \flat	C \sharp	d
E \flat	E	G	A \flat	B \flat	B	D	e \flat
E	F	G \sharp	A	B	C	D \sharp	e
F	G \flat	A	B \flat	C	D \flat	E	f
F \sharp	G	A \sharp	B	C \sharp	D	F	f \sharp
G	A \flat	B	C	D	E \flat	F \sharp	g
A \flat	A	C	D \flat	E \flat	E	G	a \flat
A	B \flat	C \sharp	D	E	F	G \sharp	a
B \flat	B	D	E \flat	F	G \flat	A	b \flat
B	C	D \sharp	E	F \sharp	G	A \sharp	b

#31 Major 2- 6- 7-

SPANISH

7-Tones



Intervals: $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1

Formula: mH -1- mN

Modal Series Scale Point Tone: MS 7-VII:4

Backward: #60 Harmonic-Major

Backward MS:SPT: MS 7-VIII:4

Alternate Names:

Ahaba Rabba (Jewish, Penitential Prayers)

Asbein (Arabic)

Gypsy

Ispahan

Jazz Scale (used against Dominant 7th Chord)

Major Phrygian

Phrygian Dominant

Phrygian Major

Saika (Arabic)

SPANISH

Zeidan (Arabic)

Altered:

5-Tone ...	#162	Hirajoshi #4	= Spanish 3omit 7omit
	#163	Kumoi #2	= Spanish 3omit 6omit
	#175	Rewa	= Spanish 4omit 7omit
	#176	Dominant-Pent.	= Spanish 4omit 6omit
	#181	Semi. Pent. #3	= Spanish 2omit 6omit
6-Tone ...	#73	In Scale	= Spanish 3omit
	#83	Bangala	= Spanish 7omit
	#84	Greek	= Spanish 6omit
8-Tone ...	#111	Spanish 8-Tone	= Spanish 3- 3

(cont'd)

#31 Major 2- 6- 7- (cont'd)

SPANISH (cont'd)

7-Tones

Ethnic Uses:

Arabic
 Greek, modern
 Gypsy
 Jewish
 Persia
 Poland
 Roumania
 Spain
 Turkey

Source:

Colin, page 310

C D \flat E F G A \flat B \flat c
 D \flat D F G \flat A \flat A B d \flat
 D E \flat F \sharp G A B \flat C d
 E \flat E G A \flat B \flat B D \flat e \flat
 *E F G \sharp A B C D e
 F G \flat A B \flat C D \flat E \flat f
 F \sharp G A \sharp B C \sharp D E f \sharp
 G A \flat B C D E \flat F g
 A \flat A C D \flat E \flat E G \flat a \flat
 A B \flat C \sharp D E F G a
 B \flat B D E \flat F G \flat A \flat b \flat
 B C D \sharp E F \sharp G A b

*Uses only white keys on piano except for one note

#32 Major 2+ 7-

ROUMANIAN-MAJOR

7-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $1\frac{1}{2}$ - 1

Formula: (13) -1- m

Modal Series Scale Point Tone: MS 7-XIII:1

Backward: #48 Ptolemy's Mixed Hypodorian

Backward MS:SPT: MS 7-XIV:1

Alternate Names:

Roumanian

ROUMANIAN-MAJOR

Altered:

- 5-Tone ... #161 Semi. Pent. #1 = Roum-Maj. 3omit 5omit
 #164 Pentatonic #2 = Roum-Maj. 3omit 6omit
 #174 Pent.-Dominant = Roum-Maj. 4omit 6omit
 #179 Pelog #3 = Roum-Maj. 2omit 5omit
 #181 Semi. Pent. #3 = Roum-Maj. 2omit 6omit
 #182 Bulgarian = Roum-Maj. 2omit 7omit
- 6-Tone ... #77 Dorian 6-Tone = Roum-Maj. 3omit
 #85 Polish = Roum-Maj. 2omit
- 8-Tone ... #123 Dorian 8-Tn #1 = Roum-Maj. 2- 2
- 9-Tone ... #142 Auxiliary-Blues = Roum-Maj. 2- 2 4 4+
 #144 Aeolian 9-Tone = Roum-Maj. 2- 2 6- 6
 #145 Dorian 9-Tone = Roum-Maj. 2- 2 7 7+

C D# E F G A Bb c
 Db E F Gb Ab Bb B db
 *D F F# G A B C d
 Eb F# G Ab Bb C Db eb
 E G G# A B C# D e
 F G# A Bb C D Eb f
 Gb A Bb B C# D# E gb
 *G A# B C D E F g
 Ab B C Db Eb F Gb ab
 A C Db D E F# G a
 Bb C# D Eb F G Ab bb
 B D D# E F# G# A b

Ethnic Uses:

Roumania

Turkey

*Use only white keys on piano except for one note

#33 Major 2- 7-

ARABIC

7-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -1- $1-\frac{1}{2}$ -1

Formula: mH -1- m

Modal Series Scale Point Tone: MS 7-VIII:1

Backward: #47 Harmonic-minor

Backward MS:SPT: MS 7-VII:7

Alternate Names:

ARABIC

Jazz Scale (used against Dominant 7th chord)

Altered:

5-Tone	...	#163 Kumoi #2	= Arabic 3omit 6omit
		#165 Japan. Pent. #4	= Arabic 3omit 7omit
		#176 Dominant Pent.	= Arabic 4omit 6omit
		#177 Scriabin	= Arabic 4omit 7omit
		#179 Pelog #3	= Arabic 2omit 5omit
		#181 Semi. Pent. #3	= Arabic 2omit 6omit
6-Tone	...	#182 Bulgarian	= Arabic 2omit 7omit
		#84 Greek	= Arabic 6omit
		#85 Polish	= Arabic 2omit
8-Tone	...	#112 Latin-American	= Arabic 3- 3

Ethnic Uses:

Arabia

Bulgaria (Old Church Singing)

Greece, modern

(cont'd)

#33 Major 2- 7- (cont'd)

ARABIC (cont'd)

7-Tones

Source:

Grove Dictionary of Music,
Volume III, page 272

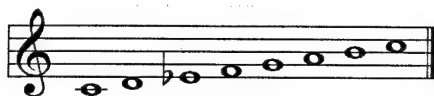
C	D \flat	E	F	G	A	B \flat	c
D \flat	D	F	G \flat	A \flat	B \flat	B	d \flat
D	E \flat	F \sharp	G	A	B	C	d
E \flat	E	G	A \flat	B \flat	C	D \flat	e \flat
E	F	G \sharp	A	B	C \sharp	D	e
F	G \flat	A	B \flat	C	D	E \flat	f
F \sharp	G	A \sharp	B	C \sharp	D \sharp	E	f \sharp
*G	A \flat	B	C	D	E	F	g
A \flat	A	C	D \flat	E \flat	F	G \flat	a \flat
A	B \flat	C \sharp	D	E	F \sharp	G	a
B \flat	B	D	E \flat	F	G	A \flat	b \flat
B	C	D \sharp	E	F \sharp	G \sharp	A	b

*Uses only white keys on piano except one note

#34 Major 3-

MELODIC MINOR

7-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1- 1-1- $\frac{1}{2}$

Formula: m -1- M

Modal Series Scale Point Tone: MS 7-II:7

Backward: #16 Javanese

Backward MS:SPT: MS 7-II:1

Alternate Names:

Bayat-i Ispahan

Hawaiian

Jazz minor

Jazz Scale against Dominant 7th chord

MELODIC MINOR

Minor Melodic

Altered:

5-Tone	...	#166	Jazz minor Pent	=	Melod. min. 2omit 7omit
		#186	Kumoi #1	=	Melod. min. 4omit 7omit
		#189	Semi. Pent. #5	=	Melod. min. 3omit 6omit
		#192	Pentatonic #1	=	Melod. min. 3omit 7omit
6-Tone	...	#65	African	=	Melod. min. 2omit
		#86	Ionian 6-Tone	=	Melod. min. 3omit
		#94	Hungarian	=	Melod. min. 7omit
8-Tone	...	#127	Arabic	=	Melod. min. 5 5+
		#127	Arabic	=	Melod. min. 6- 6
		#130	Dorian 8-Tn #2	=	Melod. min. 6 6+
		#130	Dorian 8-Tn #2	=	Melod. min. 7- 7
		#143	Bartok's 9-Tone	=	Melod. min. 3 3+ 5- 5
9-Tone	...	#145	Dorian 9-Tone	=	Melod. min. 3 3+ 6 6+
		#145	Dorian 9-Tone	=	Melod. min. 3 3+ 7- 7

(cont'd)

#34 Major 3- (cont'd)

MELODIC MINOR (cont'd)

7-Tones

Ethnic Uses:

Appalachian Mts., Southern (USA)

Arabia

Germany

Hawaii

Hungary

India

Italy

Persia

Yugoslavia

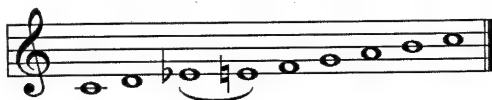
Source:

Slonimsky, page 139

NOTE: The Melodic minor Scale is taught as lowered 3rd ascending and then lowered 3rd, 6th, and 7th (#49 Natural minor) descending. This way is easier to sing, but it does not always have to be played like that. In fact, Bach played it with just the lowered 3rd ascending and descending, as do many jazz musicians today.

*C	D	E \flat	F	G	A	B	c
D \flat	E \flat	E	G \flat	A \flat	B \flat	C	d \flat
*D	E	F	G	A	B	C \sharp	d
E \flat	F	G \flat	A \flat	B \flat	C	D	e \flat
E	F \sharp	G	A	B	C \sharp	D \sharp	e
F	G	A \flat	B \flat	C	D	E	f
G \flat	A \flat	A	B	D \flat	E \flat	F	g \flat
G	A	B \flat	C	D	E	F \sharp	g
A \flat	B \flat	B	D \flat	E \flat	F	G	a \flat
A	B	C	D	E	F \sharp	G \sharp	a
B \flat	C	D \flat	E \flat	F	G	A	b \flat
B	C \sharp	D	E	F \sharp	G \sharp	A \sharp	b

*Uses only white keys on piano except one note

#35 Major [3-/3]**AREZZO (Italy)****7-Tones**

Intervals: $[1-\frac{1}{2}-1/1-1-\frac{1}{2}]$ -1- $1-1-\frac{1}{2}$

Formula: [m/M] -1- M

Combination of:

#1 Major

#34 Melodic minor (Major 3-)

Modal Series Scale Point Tone:

#1 = MS 7-I:3

#34 = MS 7-II:7

Backward:

#1 = #15 Phrygian

#34 = #16 Javanese

Backward MS:SPT:

#1 = #15 = MS 7-I:5

#34 = #16 = MS 7-II:1

Ethnic Uses:

Arezzo, Italy

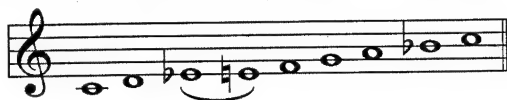
Source:

Groves Dictionary of Music,
Volume III, page 300

#36 Major [3-/3] 7-

BASQUE

7-Tones



Intervals: $[1-1-\frac{1}{2}/1-\frac{1}{2}-1]$ $-1-$ $1-\frac{1}{2}-1$

Formula: $[M/m]$ $-1-$ m

Combination of:

#50 Dorian (Major 3- 7-)

#62 Mixolydian (Major 7-)

Modal Series Scale Point Tone:

#50 = MS 7-I:4

#62 = MS 7-I:7

Backward:

#50 = #50 Dorian (same scale)

#62 = #49 Natural minor

Backward MS:SPT:

#50 = #50 = MS 7-I:4 (same)

#62 = #49 = MS 7-I:1

Ethnic Uses:

Basque (in Spain)

#37 Major 3- 4+

LYDIAN-DIMINISHED

7-Tones



Intervals: $1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}$

Formula: (8) $-\frac{1}{2}-$ M

Modal Series Scale Point Tone: MS 7-VIII:7

Backward: #13 Hijazi

Backward MS:SPT: MS 7-VII:1

Alternate Names:

Greek

LYDIAN-DIMINISHED

Altered:

5-Tone ... #183 Pelog #2 = Lydian-Dim. 3omit 6omit
 #186 Kumoi #1 = Lydian-Dim. 4omit 7omit
 #187 Semi. Pent. #2 = Lydian-Dim. 3omit 7omit

Ethnic Uses:

Greece

Jewish

Used by:

Scriabin

Source:

Russell, page 5

C D E \flat F \sharp G A B c
 D \flat E \flat E G A \flat B \flat C d \flat
 D E F G \sharp A B C \sharp d
 E \flat F G \flat A B \flat C D e \flat
 E F \sharp G A \sharp B C \sharp D \sharp e
 *F G A \flat B C D E f
 G \flat A \flat A C D \flat E \flat F g \flat
 G A B \flat C \sharp D E F \sharp g
 A \flat B \flat B D E \flat F G a \flat
 A B C D \sharp E F \sharp G \sharp a
 B \flat C D \flat E F G A b \flat
 B C \sharp D F F \sharp G \sharp A \sharp b

*Uses only white keys on piano except one note

#38 Major 3- 4 4+ 6omit

CONWAY'S 7-TONE

7-Tones



Intervals: $1-\frac{1}{2}-1$ $-\frac{1}{2}-\frac{1}{2}$ $\frac{1}{2}-2-\frac{1}{2}$

Formula: m $-\frac{1}{2}$ - (d)

Modal Series Scale Point Tone: MS 7-XVIII:1

Backward: --- [Major 2- 3omit 5- 5 7-]
[(d) $-\frac{1}{2}$ - m]

Backward MS:SPT: ---

Alternate Names:

Bud Conway's 7-Tone Jazz Scale (used against
a minor 7+th chord)

CONWAY'S 7-TONE

Jazz Scale against a minor 7+th chord

Alternate Symbols:

#1 MAJOR 3- 4 4+ 6omit

#1 Major 3- 5- 5 6omit

Altered:

8-Tone ... #124 Conway's 8-Tone = Conway 7-Tn [6-/6]

9-Tone ... #143 Bartok's 9-Tone = Conway 7-Tn 3- 3 6

Ethnic Uses: ---

Used by:

John ("Bud") Conway

Source:

Given to me by Bud Conway himself.

C	D	E \flat	F	F \sharp	G	B	c
D \flat	E \flat	E	F \sharp	G	A \flat	C	d \flat
D	E	F	G	G \sharp	A	C \sharp	d
E \flat	F	G \flat	A \flat	A	B \flat	D	e \flat
E	F \sharp	G	A	A \sharp	B	D \sharp	e
F	G	A \flat	B \flat	B	C	E	f
G \flat	A \flat	A	B	C	D \flat	F	g \flat
G	A	B \flat	C	C \sharp	D	F \sharp	g
A \flat	B \flat	B	C \sharp	D	E \flat	G	a \flat
A	B	C	D	D \sharp	E	G \sharp	a
B \flat	C	D \flat	E \flat	E	F	A	b \flat
B	C \sharp	D	E	F	F \sharp	A \sharp	b

#39 Major 3- [4/4+] 7-

TURKISH

7-Tones



Intervals: $[1-\frac{1}{2}-1/1-\frac{1}{2}-1\frac{1}{2} \quad -1/\frac{1}{2}-] \quad 1-\frac{1}{2}-1$

Formula: $[m/(8) \quad -1/\frac{1}{2}-] \quad m$

Combination of:

#50 Dorian (Major 3- 7-)

#44 Roumanian-minor (Major 3- 4+ 7-)

Modal Series Scale Point Tone:

#50 = MS 7-I:4

#44 = MS 7-VII:3

Backward:

#50 = #50 Dorian (same scale)

#44 = #46 Zangula

Backward MS:SPT:

#50 = #50 = MS 7-I:4 (same)

#44 = #46 = MS 7-VIII:5

Ethnic Uses:

Turkey

#40 Major 3- 4+ 6-

HUNGARIAN-MINOR

7-Tones



Intervals: $1-\frac{1}{2}-1\frac{1}{2}$ $-\frac{1}{2}-$ $\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$

Formula: (8) $-\frac{1}{2}-$ mH

Modal Series Scale Point Tone: MS 7-IV:7

Backward: #28 Oriental

Backward MS:SPT: MS 7-IV:1

Alternate Names:

Augmented Gypsy minor

Gypsy Scale

HUNGARIAN-MINOR

Jazz Scale against minor 7+ chord

Oriental

Altered:

5-Tone	...	#183 Pelog #2	= Hung-min. 3omit 6omit
		#184 Hirajoshi #1	= Hung-min. 4omit 7omit
10-Tone	...	#150 Algerian	= Hung-min + minor tet.

Ethnic Uses:

Argentina

Algeria (with minor tetrachord above the octave)

Greece, modern

Gypsy

Hungarian Gypsy

Hungary

Jewish

Oriental (Near east) (often)

Turkey

C	D	E \flat	F \sharp	G	A \flat	B	c
D \flat	E \flat	E	G	A \flat	A	C	d \flat
D	E	F	G \sharp	A	B \flat	C \sharp	d
E \flat	F	G \flat	A	B \flat	B	D	e \flat
E	F \sharp	G	A \sharp	B	C	D \sharp	e
F	G	A \flat	B	C	D \flat	E	f
F \sharp	G \sharp	A	C	C \sharp	D	F	f \sharp
G	A	B \flat	C \sharp	D	E \flat	F \sharp	g
A \flat	B \flat	B	D	E \flat	E	G	a \flat
A	B	C	D \sharp	E	F	G \sharp	a
B \flat	C	D \flat	E	F	G \flat	A	b \flat
B	C \sharp	D	F	F \sharp	G	A \sharp	b

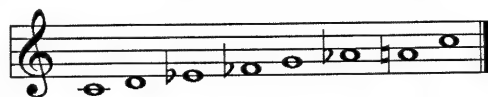
Source:

Golden Encyclopedia of Music, page 504

#41 Major 3- 4- 6- 6 7omit

CHROMATIC HYPODORIAN, ASC.

7-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$

Formula: (7) $-1\frac{1}{2}$ - (3)

Modal Series Scale Point Tone: MS 7-V:5

Backward: #29 Persian

Backward MS:SPT: MS 7-VI:3

Modern "Spelling":

Major 3- 4- 6- 7b b

Alternate Names:

Ancient Greek, Chromatic Hypodorian

CHROMATIC HYPODORIAN (Anct. Greek) (Asc.)

Altered:

5-Tone ... #184 Hirajoshi #1 = Ch.Hypodor.4om 6- 6om

Ethnic Uses:

Greece, Ancient

Source:

Vincent, page 157

C	D	Eb	E	G	Ab	A	c
D \flat	E \flat	E	F	G \sharp	A	B \flat	d \flat
D	E	F	G \flat	A	B \flat	B	d
Eb	F	G \flat	G	A \sharp	B	C	e \flat
E	F \sharp	G	Ab	B	C	D \flat	e
F	G	Ab	A	C	D \flat	D	f
F \sharp	G \sharp	A	B \flat	C \sharp	D	E \flat	f \sharp
G	A	B \flat	B	D	E \flat	E	g
Ab	B \flat	B	C	D \sharp	E	F	a \flat
A	B	C	D \flat	E	F	G \flat	a
B \flat	C	D \flat	D	F	G \flat	G	b \flat
B	C \sharp	D	E \flat	F \sharp	G	Ab	b

#42 Major 3- 4+ 6- 7-

GREEK

7-Tones



Intervals: $1 - \frac{1}{2} - 1\frac{1}{2} - \frac{1}{2} - \frac{1}{2} - 1 - 1$

Formula: (8) $-\frac{1}{2}-$ mN

Modal Series Scale Point Tone: MS 7-IX:1

Backward: #58 Zenkla

Backward MS:SPT: MS 7-X:7

Alternate Names:

Ethiopian Church Music

GREEK

Hungarian Gypsy

Altered:

5-Tone ... #154 Japanese = Greek 2omit 5omit
 #184 Hirajoshi #1 = Greek 4omit 7omit
 #185 African = Greek 4omit 6omit
 9-Tone ... #138 Locrian 9-Tone = Greek 2- 2 4- 4

Ethnic Uses:

Ethiopia (church music)

Greece

Source:

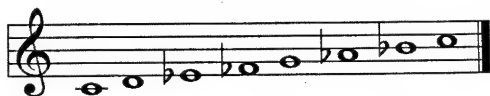
Groves Dictionary of Music
 Volume III, page 272

C	D	E \flat	F \sharp	G	A \flat	B \flat	c
D \flat	E \flat	E	G	A \flat	A	B	d \flat
D	E	F	G \sharp	A	B \flat	C	d
E \flat	F	G \flat	A	B \flat	B	D \flat	e \flat
E	F \sharp	G	A \sharp	B	C	D	e
F	G	A \flat	B	C	D \flat	E \flat	f
G \flat	A \flat	A	C	D \flat	D	E	g \flat
G	A	B \flat	C \sharp	D	E \flat	F	g
A \flat	B \flat	B	D	E \flat	E	G \flat	a \flat
A	B	C	D \sharp	E	F	G	a
B \flat	C	D \flat	E	F	G \flat	A \flat	b \flat
B	C \sharp	D	F	F \sharp	G	A	b

#43 Major 3- 4- 6- 7-

GREEK

7-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1$

Formula: (7) $-1\frac{1}{2}-$ mN

Modal Series Scale Point Tone: MS 7-X:1

Backward: #59 Rummel-Meia

Backward MS:SPT: MS 7-IX:7

Altered:

- 5-Tone ... #171 Japan. Pent. #3 = Greek 2omit 5omit
 #174 Pent.-Dominant = Greek 2omit 6omit
 #184 Hirajoshi #1 = Greek 4omit 7omit
 #185 African = Greek 4omit 6omit
 8-Tone ... #122 Aeolian 8-Tn #1= Greek 4 4+
 9-Tone ... #144 Aeolian 9-Tone = Greek 4 4+ 6 6+

Ethnic Uses:

Greek folk music

Source:

Groves Dictionary of Music,
 Volume III, page 272

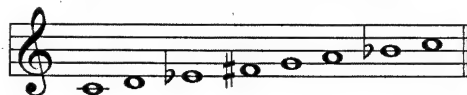
C	D	E \flat	E	G	A \flat	B \flat	c
D \flat	E \flat	E	F	G \sharp	A	B	d \flat
D	E	F	G \flat	A	B \flat	C	d
E \flat	F	G \flat	G	A \sharp	B	D \flat	e \flat
E	F \sharp	G	A \flat	B	C	D	e
F	G	A \flat	A	C	D \flat	E \flat	f
G \flat	A \flat	A	B \flat	C \sharp	D	E	g \flat
G	A	B \flat	B	D	E \flat	F	g
A \flat	B \flat	B	C	D \sharp	E	G \flat	a \flat
*A	B	C	D \flat	E	F	G	a
B \flat	C	D \flat	D	F	G \flat	A \flat	b \flat
B	C \sharp	D	D \sharp	F \sharp	G	A	b

*Uses only white keys on piano except one note

#44 Major 3- 4+ 7-

ROUMANIAN-MINOR

7-Tones



Intervals: 1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: (8) - $\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 7-VII:3

Backward: #46 Zangula

Backward MS:SPT: MS 7-VIII:5

Alternate Names:

Overtone minor

Roumanian

ROUMANIAN-MINOR

Saika (Arabic)

Zeidan (Arabic)

Altered:

5-Tone ...	#185	African	= Roum-min. 4omit 6omit
	#186	Kumoi #1	= Roum-min. 4omit 7omit
	#187	Semi. Pent. #2	= Roum-min. 3omit 7omit
6-Tone ...	#66	Blues	= Roum-min 2om 6om 4-,4
	#88	Akebono	= Roum-min. 4omit
	#89	Overtone 6-Tn	= Roum-min. 3omit
8-Tone ...	#121	Jobim's	= Roum-min. 3 3+
9-Tone ...	#142	Auxil. Blues	= Roum-min. 3 3+ 4- 4

C D E \flat F \sharp G A B \flat c
 D \flat E \flat E G A \flat B \flat B d \flat
 *D E F G \sharp A B C d
 E \flat F G \flat A B \flat C D \flat e \flat
 E F \sharp G A \sharp B C \sharp D e
 F G A \flat B C D E \flat f
 F \sharp G \sharp A C C \sharp D \sharp E f \sharp
 G A B \flat C \sharp D E F g
 A \flat B \flat B D E \flat F G \flat a \flat
 A B C D \sharp E F \sharp G a
 B \flat C D \flat E F G A \flat b \flat
 B C \sharp D F F \sharp G \sharp A b

Ethnic Uses:

Arabia

Greece

Roumania

Turkey

Source:

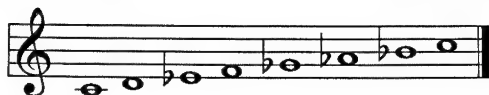
Colin, page 311

*Uses only white keys on piano except one note

#45 Major 3- 5- 6- 7-

HALF-DIMINISHED

7-Tones



Intervals: 1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ - 1-1-1

Formula: m - $\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 7-II:5

Backward: #55 Overtone

Backward MS:SPT: MS 7-II:3

Alternate Names:

Acoustic Scale (Bartok's), ascending

Altered Locrian

Bartok's Acoustic Scale, ascending

HALF-DIMINISHED

Locrian 2

Locrian 2+

Altered:

- 5-Tone ... #154 Japanese = Half-Dim. 2omit 4omit
 #158 Pentatonic #5 = Half-Dim. 2omit 5omit
 #159 Kumoi #5 = Half-Dim. 2omit 6omit
 #188 Japan. Pent. #2 = Half-Dim. 3omit 6omit
- 6-Tone ... #90 Aeolian 6-Tone = Half-Dim. 5omit
- 8-Tone ... #105 Locrian 8-T #1 = Half-Dim. 1 1+
 #105 Locrian 8-T #1 = Half-Dim. 2- 2
 #126 Composite #2 = Half-Dim. 6 6+
- 9-Tone ... #138 Locrian 9-Tone = Half-Dim. 2- 2 5 5+

C D Eb F Gb Ab Bb c
 Db Eb E F# G A B db
 D E F G Ab Bb C d
 Eb F Gb Ab A B Db eb
 E F# G A Bb C D e
 F G Ab Bb B Db Eb f
 F# G# A B C D E f#
 G A Bb C Db Eb F g
 Ab Bb B C# D E Gb ab
 A B C D Eb F G a
 Bb C Db Eb E Gb Ab bb
 *B C# D E F G A b

Ethnic Uses: ---

Used by: Leos Janacek

Source:

Mann, page 207

*Uses only white keys on piano except for one note

#46 Major 3- 5- 7-

ZANGULA

7-Tones



Intervals: $1-\frac{1}{2}-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$

Formula: m $-\frac{1}{2}-$ (14)

Modal Series Scale Point Tone: MS 7-VIII:5

Backward: #44 Roumanian-minor

Backward MS:SPT: MS 7-VII:3

Alternate Names:

Arabic

ZANGULA (Arabic)

Altered:

- 5-Tone ... #159 Kumoi #5 = Zangula 2omit 6omit
 #161 Semi. Pent. #1 = Zangula 2omit 5omit
 #188 Japan. Pent. #2 = Zangula 3omit 6omit
 8-Tone ... #126 Composite #2 = Zangula 6- 6
 9-Tone ... #142 Auxiliary Blues = Zangula 3 3+ 5 5+

Ethnic Uses:

Arabia

Tunisia

Turkey

C	D	E \flat	F	G \flat	A	B \flat	c
D \flat	E \flat	E	F \sharp	G	A \sharp	B	d \flat
*D	E	F	G	A \flat	B	C	d
E \flat	F	G \flat	A \flat	A	C	D \flat	e \flat
E	F \sharp	G	A	B \flat	C \sharp	D	e
F	G	A \flat	B \flat	B	D	E \flat	f
F \sharp	G \sharp	A	B	C	D \sharp	E	f \sharp
G	A	B \flat	C	D \flat	E	F	g
A \flat	B \flat	B	C \sharp	D	F	G \flat	a \flat
A	B	C	D	E \flat	F \sharp	G	a
B \flat	C	D \flat	E \flat	E	G	A \flat	b \flat
B	C \sharp	D	E	F	G \sharp	A	b

Source:

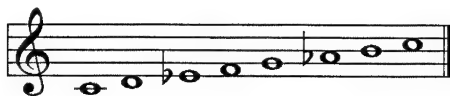
Harvard Dictionary of Music, page 47

*Uses only white keys on piano except for one note

#47 Major 3- 6-

HARMONIC-MINOR

7-Tones



Intervals: $1-\frac{1}{2}-1$ $-1-$ $\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$

Formula: m -1- mH

Modal Series Scale Point Tone: MS 7-VII:7

Backward: #33 Arabic

Backward MS:SPT: MS 7-VIII:1

Alternate Names:

HARMONIC-MINOR

Jazz Scale against Minor 7+ Chord

Kafi (Hindu)

L'Sain-Sebah

Minor-Harmonic

Mohamedan

Altered:

5-Tone	...	#184 Hirajoshi #1	= Harm-min. 4omit 7omit
		#189 Semi. Pent. #5	= Harm-min. 3omit 6omit
		#190 Kumoi #4	= Harm-min. 3omit 7omit
6-Tone	...	#91 Armenian	= Harm-min. 3omit
		#93 Glinka's	= Harm-min. 7omit
8-Tone	...	#127 Arabic	= Harm-min. 6 6+
		#129 Isfahan	= Harm-min. 7- 7

Ethnic Uses:

Arabia

Basque

England

Germany

Hungary

India (Hindu)

(cont'd)

#47 Major 3- 6- (cont'd)

HARMONIC-MINOR (cont'd)

7-Tones

Ethnic Uses (cont'd):

Jewish
 Persia
 Poland
 Slovakia
 Spain
 Sweden

Used by:

Rameau

Source:

Slonimsky, page 151

C D E \flat F G A \flat B c
 D \flat E \flat E F \sharp G \sharp A C d \flat
 D E F G A B \flat C \sharp d
 E \flat F G \flat A \flat B \flat B D e \flat
 E F \sharp G A B C D \sharp e
 F G A \flat B \flat C D \flat E f
 F \sharp G \sharp A B C \sharp D F f \sharp
 G A B \flat C D E \flat F \sharp g
 A \flat B \flat B C \sharp D \sharp E G a \flat
 *A B C D E F G \sharp a
 B \flat C D \flat E \flat F G \flat A b \flat
 B C \sharp D E F \sharp G A \sharp b

*Uses only white keys on the piano except one note



Formula: $m = -1$ (3)

Backward MS:SPT: MS 7-XIII:1

Today's "Spelling": Major 3- 6- 7 \flat \flat

Ptolemy's Scale

9-Tone ... #144 Aeolian 9-Tone = Ptolemy 3 3+ 7-

Greece, Ancient

Vincent, page 162

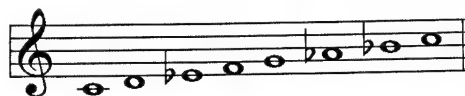
C	D	E \flat	F	G	A \flat	A	c
D \flat	E \flat	E	F \sharp	G \sharp	A	B \flat	d \flat
*D	E	F	G	A	B \flat	B	d
E \flat	F	G \flat	A \flat	B \flat	B	C	e \flat
E	F \sharp	G	A	B	C	D \flat	e
F	G	A \flat	B \flat	C	D \flat	D	f
F \sharp	G \sharp	A	B	C \sharp	D	E \flat	f \sharp
G	A	B \flat	C	D	E \flat	E	g
A \flat	B \flat	B	C \sharp	D \sharp	E	F	a \flat
*A	B	C	D	E	F	G \flat	a
B \flat	C	D \flat	E \flat	F	G \flat	G	b \flat
B	C \sharp	D	E	F \sharp	G	A \flat	b

*Uses only white keys on piano except one note

#49 Major 3- 6- 7-

NATURAL MINOR

7-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ -1-1

Formula: m -1- mN

Modal Series Scale Point Tone: MS 7-I:1

Backward: #62 Mixolydian

Backward MS:SPT: MS 7-I:7

Alternate Names:

- Aeolian
- Aeolian (Ancient Greek)
- "A" Diatonic Mode
- "A" Mode
- Ancient Greek:
 - Aeolian
 - Hyperphrygian
 - Hypodorian
 - Locrian
- Asavari (Hindu)
- Authentic 9th Mode
- Bayat-i 'Kwa (Persian)
- Chiao, 7-Tone (China)
- Church Mode
- Diatonic "A" Mode
- Ecclesiastical Mode:
 - 9th Authentic
 - 2nd Plagal
- Ethiopia:
 - Ezel
 - Geez
- Ezel (Ethiopia)
- Geez (Ethiopia)
- Hindu
- Hypermixolydian
- Hyperphrygian (Ancient Greek)

(cont'd)

#49 Major 3- 6- 7- (cont'd)

NATURAL MINOR (cont'd)

7-Tones

Alternate Names (cont'd):

Hypodorian (Ancient Greek)
 Hypodorian (Ecclesiastical)
 Jazz Scale (against Minor 7th Chord)
 Locrian (Ancient Greek)
 L'sain
 Minor Mode
 Minor Natural
 Mode of "A"
 NATURAL MINOR
 Nava (Persian)
 Nawa (Arabic)
 Neva (Arabic)
 Normal minor
 Oshikicho (Japanese)
 Plagal 2nd Mode
 Pure minor
 Rast (Arabic)
 Shur (Persian)
 Yavanapuri (Hindu)

Altered:

5-Tone	...	#158 Pentatonic #5	= Nat. min. 2omit 5omit
		#164 Pentatonic #2	= Nat. min. 2omit 6omit
		#184 Hirajoshi #1	= Nat. min. 4omit 7omit
		#185 African	= Nat. min. 4omit 6omit
		#190 Kumoi #4	= Nat. min. 3omit 7omit
6-Tone	...	#191 Pentatonic #4	= Nat. min. 3omit 6omit
		#75 Irish	= Nat. min. 2omit
		#90 Aeolian 6-Tone	= Nat. min. 5omit
		#92 Greek	= Nat. min. 6omit
8-Tone		#93 Glinka's	= Nat. min. 7omit
	...	#106 Phryg. 8-Tn #1	= Nat. min. 2- 2
		#122 Aeolian 8-T #1	= Nat. min. 3 3+
		#122 Aeolian 8-T #1	= Nat. min. 4- 4
		#128 Aeolian 8-T #2	= Nat. min. 6 6+
		#129 Isfahan	= Nat. min. 7 7+
		#135 Magon Abot	= Nat. min. + low 7+

(cont'd)

#49 Major 3- 6- 7- (cont'd)

NATURAL MINOR (cont'd)

7-Tones

Altered (cont'd):

9-Tone ... #138 Locrian 9-Tone = Nat. min. 2- 2 4 4+
 #138 Locrian 9-Tone = Nat. min. 2- 2 5- 5
 #139 Phrygian 9-Tn = Nat. min. 2- 2 6 6+
 #144 Aeolian 9-Tone = Nat. min. 3 3+ 6 6+
 #148 Tudor Scale = Nat. min. + low 6+ 7+

Ethnic Uses:

African-American Slaves
 Algerian
 Appalachian Mts., So. (USA)
 Arabia
 Basque
 Britain
 Bulgaria
 China
 Czechoslovakia
 Denmark
 England
 England, Tudor
 (with 6 \sharp 7 \sharp below octave; #148)
 Estonia
 Ethiopia
 Finland
 France
 Gaelic
 Galicia, Spain
 Greece, Ancient
 Greece, modern (one of main ones)
 Hungary
 India (Hindu)
 Ireland
 Italy
 Japan
 Jewish
 Jewish, faith declarations
 (with 7 \sharp below octave; see #135)

(cont'd)

#49 Major 3- 6- 7- (cont'd)

NATURAL MINOR (cont'd)

7-Tones

Ethnic Uses (cont'd):

Moravia
 Morocco
 Persia
 Peruvian Indians
 Poland
 Portugal
 Russia
 Scotland
 Sweden
 Turkey
 Wales

Source:

Colin, page 308

C	D	E ^b	F	G	A ^b	B ^b	c
D ^b	E ^b	E	F [#]	G [#]	A	B	d ^b
*D	E	F	G	A	B ^b	C	d
E ^b	F	G ^b	A ^b	B ^b	B	D ^b	e ^b
*E	F [#]	G	A	B	C	D	e
F	G	A ^b	B ^b	C	D ^b	E ^b	f
F [#]	G [#]	A	B	C [#]	D	E	f [#]
G	A	B ^b	C	D	E ^b	F	g
A ^b	B ^b	B	C [#]	D [#]	E	G ^b	a ^b
**A	B	C	D	E	F	G	a
B ^b	C	D ^b	E ^b	F	G ^b	A ^b	b ^b
B	C [#]	D	E	F [#]	G	A	b

*Uses only white keys on piano except one note

**Uses only (and all) white keys on piano

#50 Major 3- 7-

DORIAN

7-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1- 1- $\frac{1}{2}$ -1

Formula: m -1- m

Modal Series Scale Point Tone: MS 7-I:4

Backward: #50 Dorian (Same Scale)

Backward MS:SPT: MS 7-I:4 (Same)

Alternate Names:

Ancient Greek, Phrygian
 Authentic 1st Mode
 Banshikicho, Ritsu Scale (on B) (Japan)
 Banshikicho, Togaku, System III (on B)
 Church Mode
 D Diatonic Mode
 D Mode
 Diatonic D Mode
 DORIAN
 Ecclesiastical Modes:
 1st Authentic Mode
 8th Plagal Mode
 Protos
 Gagku Ritsu (on E)
 Hindu
 Hyojo, Ritsu Scale (on E) (Japan)
 Hyojo, Togaku, System II (on E) (Japan)
 Hyperian
 Hyperionian
 Hypomixolydian
 Irak (Arabic)
 Jazz Scale against a minor 7th chord
 Minor Mode
 Mode of D
 Oshikicho, Ritsu Scale (on A) (Japan)
 Oshikicho, Togaku, System I (on A) (Japan)

(cont'd)

Alternate Names (cont'd):

Phrygian (Ancient Greece)
 Plagal 8th Mode
 Protos (Ecclesiastical Scale)
 Rasd-Edzeil (Arabic)
 Ritsu on D (Japan)
 Ritsu, 7-Tone Scale (Japan)
 Banshikicho (on B)
 Hyojo (on E)
 Oshikicho (on A)
 Ritsu (on D)
 Togaku Mode, System I, Oshikicho (on A)
 Togaku Mode, System II, Hyojo (on E)
 Togaku Mode, System III, Banshikicho (on B)
 Yu 7-Tone (China)

Altered:

5-Tone	...	#161 Semi. Pent. #1	= Dorian 2omit 5omit
		#164 Pentatonic #2	= Dorian 2omit 6omit
		#166 Jazz minor Pent.	= Dorian 2omit 7omit
		#185 African	= Dorian 4omit 6omit
		#186 Kumoi #1	= Dorian 4omit 7omit
		#191 Pentatonic #4	= Dorian 3omit 6omit
		#192 Pentatonic #1	= Dorian 3omit 7omit
6-Tone	...	#66 Blues	= Dorian 2om. 6om. 4 4+
		#77 Dorian 6-Tone	= Dorian 2omit
		#88 Akebono	= Dorian 4omit
		#92 Greek	= Dorian 6omit
		#94 Hungarian	= Dorian 7omit
		#95 Appalachian	= Dorian 3omit
8-Tone	...	#123 Dorian 8-Tn #1	= Dorian 3 3+
		#128 Aeolian 8-T #2	= Dorian 5 5+
		#128 Aeolian 8-T #2	= Dorian 6- 6
		#130 Dorian 8-Tn #2	= Dorian 7 7+
9-Tone	...	#139 Phrygian 9-Tone	= Dorian 2- 2 6- 6
		#142 Auxil. Blues	= Dorian 3 3+ 4 4+
		#144 Aeolian 9-Tone	= Dorian 3 3+ 6- 6
		#145 Dorian 9-Tone	= Dorian 3 3+ 7 7+
		#146 Armenian	= Dorian 9- 10

#50 Major 3- 7- (cont'd)

DORIAN (cont'd)

7-Tones

Ethnic Uses:

African-American Slaves
 Algeria
 Appalachian Mts., Southern (USA)
 Arabia
 Armenia (with added 9- 10-, see #146)
 Basque (combined with #62 Mixolydian; see #35)
 British (most common for folk music)
 Bulgaria
 China
 Czechoslovakia
 Denmark
 England (20% of folk music)
 France
 Gaelic
 Galicia (Spain)
 Germany
 Greece, Ancient
 Greece, Modern (frequent)
 Hungary
 India (Hindu)
 Italy
 Ireland (8% of folk music)
 Japan
 Jewish
 Magyar
 Moravia
 Netherlands
 Poland
 Roumania
 Russia
 Scotland
 Scotch bagpipe tuning
 Slovakia
 Spain
 Sweden
 Turkey
 Wales

(cont'd)

#50 Major 3- 7- (cont'd)

DORIAN (cont'd)

7-Tones

Used by:

Edward Van Halen

Source:New International Encyclopaedia
Volume 16, page 61

C	D	E \flat	F	G	A	B \flat	c
D \flat	E \flat	E	G \flat	A \flat	B \flat	B	d \flat
**D	E	F	G	A	B	C	d
E \flat	F	G \flat	A \flat	B \flat	C	D \flat	e \flat
E	F \sharp	G	A	B	C \sharp	D	e
F	G	A \flat	B \flat	C	D	E \flat	f
F \sharp	G \sharp	A	B	C \sharp	D \sharp	E	f \sharp
*G	A	B \flat	C	D	E	F	g
A \flat	B \flat	B	D \flat	E \flat	F	G \flat	a \flat
*A	B	C	D	E	F \sharp	G	a
B \flat	C	D \flat	E \flat	F	G	A \flat	b \flat
B	C \sharp	D	E	F \sharp	G \sharp	A	b

*Uses only white keys on piano except for one note

**Uses only (and all) white keys on piano

#51 Major 4+

LYDIAN

7-Tones



Intervals: 1-1-1 $-\frac{1}{2}$ - 1-1- $\frac{1}{2}$

Formula: W $-\frac{1}{2}$ - M

Modal Series Scale Point Tone: MS 7-I:6

Backward: #12 Locrian

Backward MS:SPT: MS 7-I:2

Alternate Names:

Ancient Greek Hypolydian

Authentic 5th Mode

Church Mode

Diatonic F Mode

Ecclesiastical Modes:

5th Authentic Mode

12th Plagal Mode

Tritos

Edzeil (Arabic)

F Diatonic Mode

F Mode

Hindu

Hyperphrygian

Hypolydian (Ancient Greek)

Jazz Scale against Major 7th chord

Kalyana (Hindu)

Kung 7-Tone (China)

LYDIAN

Madhyama (Hindu)

Major Mode

Meia

Mode of F

Pelog, Lima Mode (Java)

Plagal 12th Mode

(cont'd)

Alternate Names (cont'd):

Ryo 7-Tone Scale #1

Ryo (on D)

Taishikicho (on E)

Taishikicho (Ryo Scale, on E)

Tritos (Ecclesiastical Mode)

Altered:

5-Tone	...	#167 Kumoi #3	= Lydian 2omit 5omit
		#173 Hirajoshi #5	= Lydian 2omit 6omit
		#183 Pelog #2	= Lydian 3omit 6omit
		#187 Semi. Pent. #2	= Lydian 3omit 7omit
		#194 India	= Lydian 4omit 6omit
6-Tone	...	#197 Pentatonic #3	= Lydian 4omit 7omit
		#96 Scotch	= Lydian 4omit
		#99 Lydian 6-Tone	= Lydian 7omit
8-Tone	...	#107 Hindu	= Lydian 2- 2
		#131 Ryo 8-Tone	= Lydian 4- 4
		#132 Hindu	= Lydian 5 5+
		#132 Hindu	= Lydian 6- 6
9-Tone	...	#140 Hindu	= Lydian 2- 2 4- 4
		#141 Hindu	= Lydian 2- 2 5 5+
		#141 Hindu	= Lydian 2- 2 6- 6
		#147 Ryo 9-Tone	= Lydian 4- 4 6 6+
		#147 Ryo 9-Tone	= Lydian 4- 4 7- 7

Ethnic Uses:

African-American Slaves

Appalachian Mts., Southern (USA)

Arabia

Austria

Bulgaria

China

Chou Dynasty (China)

Czechoslovakia (frequent)

Denmark

France

(cont'd)

#51 Major 4+ (cont'd)

LYDIAN (cont'd)

7-Tones

Ethnic Uses (cont'd):

Greece, Ancient
 Greece, Modern (rare)
 Iceland (almost all)
 India (Hindu)
 Ireland
 Italy
 Japan
 Java
 Netherlands
 Norway
 Persia
 Poland (main one)
 Portugal
 Scotland
 Slovakia (main one)

Used by:

Bartok	Debussy
Beethoven	Mahler
Chopin	Ravel

Source:

New International Encyclopaedia
 Volume 16, page 61

C	D	E	F#	G	A	B	c
D \flat	E \flat	F	G	A \flat	B \flat	C	d \flat
D	E	F#	G#	A	B	C#	d
E \flat	F	G	A	B \flat	C	D	e \flat
E	F#	G#	A#	B	C#	D#	e
**F	G	A	B	C	D	E	f
G \flat	A \flat	B \flat	C	D \flat	E \flat	F	g \flat
G	A	B	C#	D	E	F#	g
A \flat	B \flat	C	D	E \flat	F	G	a \flat
A	B	C#	D#	E	F#	G#	a
*B \flat	C	D	E	F	G	A	b \flat
B	D \flat	E \flat	F	G \flat	A \flat	B \flat	b

*Uses only white keys of piano except for one note

**Uses only (and all) white keys of piano

#52 Major 4+ 5+

LYDIAN-AUGMENTED

7-Tones



Intervals: 1-1-1 -1- $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: W -1- Dim

Modal Series Scale Point Tone: MS 7-II:2

Backward: #8 Super-Locrian

Backward MS:SPT: MS 7-II:6

Altered:

5-Tone ... #167 Kumoi #3 = Lyd.-Aug. 2omit 5omit
 #168 Japan. Pent. #5 = Lyd.-Aug. 2omit 6omit
 8-Tone ... #132 Hindu = Lyd.-Aug. 5- 5
 9-Tone ... #141 Hindu = Lyd.-Aug. 2- 2 5- 5

Ethnic Uses: ---

Source:

Russell, page 4

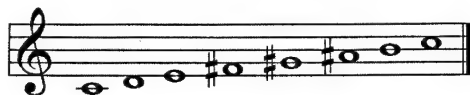
C	D	E	F#	G#	A	B	c
D \flat	E \flat	F	G	A	B \flat	C	d \flat
D	E	F#	G#	A#	B	C#	d
*E \flat	F	G	A	B	C	D	e \flat
E	F#	G#	A#	C	C#	D#	e
*F	G	A	B	C#	D	E	f
G \flat	A \flat	B \flat	C	D	E \flat	F	g \flat
G	A	B	C#	D#	E	F#	g
A \flat	B \flat	C	D	E	F	G	a \flat
A	B	C#	D#	F	F#	G#	a
B \flat	C	D	E	F#	G	A	b \flat
B	C#	D#	F	G	G#	A#	b

*Uses only white keys on piano except for one note

#53 Major 4+ 5+ 6+

LEADING WHOLE-TONE

7-Tones

Intervals: 1-1-1 -1- 1- $\frac{1}{2}$ - $\frac{1}{2}$

Formula: W -1- (7)

Modal Series Scale Point Tone: MS 7-III:5

Backward: --- [Major 2- 2 4omit 5- 6- 7-]
[(2) -1- W]

Backward MS:SPT: MS 7-III:3

Altered:

5-Tone ... #168 Japan. Pent. #5 = Ldg Whl-Tn 2omit 6omit

6-Tone ... #97 Whole Tone = Ldg Whl-Tn 7omit

Ethnic Uses: ---

Source:

Persichetti, page 44

C	D	E	F#	G#	A#	B	c
Db	Eb	F	G	A	B	C	db
D	E	F#	G#	A#	C	C#	d
Eb	F	G	A	B	C#	D	eb
E	F#	G#	A#	C	D	D#	e
F	G	A	B	C#	D#	E	f
Gb	Ab	Bb	C	D	E	F	gb
G	A	B	C#	D#	F	F#	g
Ab	Bb	C	D	E	F#	G	ab
A	B	C#	D#	F	G	G#	a
Bb	C	D	E	F#	G#	A	bb
B	C#	D#	F	G	A	A#	b

#54 Major 4+ 6- 7-

LYDIAN-MINOR

7-Tones



Intervals: 1-1-1 $-\frac{1}{2}$ - $\frac{1}{2}$ -1-1

Formula: W $-\frac{1}{2}$ - mN

Modal Series Scale Point Tone: MS 7-III:7

Backward: #57 Locrian-Major

Backward MS:SPT: MS 7-III:1

Alternate Names:

Jazz Scale used against Dominant 7th chord
LYDIAN-MINOR

Altered:

5-Tone ... #193 Jazz Pentatonic = Lydian-min. 5omit 6omit
 #195 Japan. Pent. #1 = Lydian-min. 4omit 7omit
 #196 African = Lydian-min. 4omit 6omit
 6-Tone ... #97 Whole Tone = Lydian-min. 5omit

Ethnic Uses:

Roumania

Source:

Persichetti, page 44

C	D	E	F#	G	A \flat	B \flat	c
D \flat	E \flat	F	G	A \flat	A	B	d \flat
D	E	F#	G#	A	B \flat	C	d
E \flat	F	G	A	B \flat	B	D \flat	e \flat
E	F#	G#	A#	B	C	D	e
F	G	A	B	C	D \flat	E \flat	f
F#	G#	A#	C	C#	D	E	f#
G	A	B	C#	D	E \flat	F	g
A \flat	B \flat	C	D	E \flat	E	G \flat	a \flat
A	B	C#	D#	E	F	G	a
B \flat	C	D	E	F	G \flat	A \flat	b \flat
B	C#	D#	F	F#	G	A	b

#55 Major 4+ 7-

OVERTONE

7-Tones



Intervals: 1-1-1 $-\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: W $-\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 7-II:3

Backward: #45 Half-Diminished

Backward MS:SPT: MS 7-II:5

Alternate Names:

Acoustic Scale, Descending-inverted (Bartok)
 Bartok's Acoustic Scale (Descending-inverted)
 Jazz Scale against Dominant 7 chord
 Lydian 7-
 Lydian-Dominant
 Lydian-Mixolydian
 OVERTONE

Altered:

5-Tone	...	#187 Semi. Pent. #2	= Overtone 3omit 7omit
		#193 Jazz Pentatonic	= Overtone 5omit 6omit
		#196 African	= Overtone 4omit 6omit
		#197 Pentatonic #3	= Overtone 4omit 7omit
6-Tone	...	#89 Overtone 6-Tone	= Overtone 3omit
		#98 Prometheus	= Overtone 5omit
		#99 Lydian 6-Tone	= Overtone 7omit
		#100 Scotch	= Overtone 4omit
8-Tone	...	#121 Jobim's	= Overtone 3- 3
		#133 Hindu	= Overtone 4- 4
9-Tone	...	#142 Auxil. Blues	= Overtone 3- 3 4- 4
		#147 Ryo 9-Tone	= Overtone 4- 4 7 7+

Ethnic Uses:

Roumania

(cont'd)

#55 Major 4+ 7- (cont'd)

OVERTONE (cont'd)

7-Tones

Used by:

Howard Hanson: "Symphony #4"

Source:

Slonimsky, page 141

C	D	E	F#	G	A	Bb	c
Db	Eb	F	G	Ab	Bb	B	db
D	E	F#	G#	A	B	C	d
Eb	F	G	A	Bb	C	Db	eb
E	F#	G#	A#	B	C#	D	e
*F	G	A	B	C	D	Eb	f
F#	G#	A#	C	C#	D#	E	f#
*G	A	B	C#	D	E	F	g
A	B	C#	D#	E	F#	G	a
Ab	Bb	C	D	Eb	F	Gb	ab
Bb	C	D	E	F	G	Ab	bb
B	C#	D#	F	F#	G#	A	b

*Uses only white keys on piano except one note

#56 Major 5+

IONIAN-AUGMENTED

7-Tones



Intervals: $1-1-\frac{1}{2}$ $-1\frac{1}{2}-$ $\frac{1}{2}-1-\frac{1}{2}$

Formula: M $-1\frac{1}{2}$ - Dim

Modal Series Scale Point Tone: MS 7-VII:2

Backward: #11 Byzantine

Backward MS:SPT: MS 7-VIII:6

Altered:

5-Tone	...	#178 Hirajoshi #3	= Ionian-Aug. 2omit 5omit
		#198 African	= Ionian-Aug. 5omit 7omit
8-Tone	...	#134 Bop Scale	= Ionian-Aug. 5- 5

Ethnic Uses: ---

Source:

Goodrich, page 35

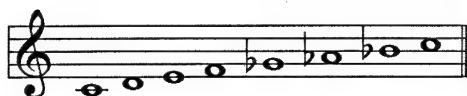
*C	D	E	F	G#	A	B	c
D \flat	E \flat	F	G \flat	A	B \flat	C	d \flat
D	E	F#	G	A#	B	C#	d
E \flat	F	G	A \flat	B	C	D	e \flat
E	F#	G#	A	C	C#	D#	e
F	G	A	B \flat	C#	D	E	f
G \flat	A \flat	B \flat	B	D	E \flat	F	g \flat
G	A	B	C	D#	E	F#	g
A \flat	B \flat	C	D \flat	E	F	G	a \flat
A	B	C#	D	F	F#	G#	a
B \flat	C	D	E \flat	F#	G	A	b \flat
B	C#	D#	E	G	G#	A#	b

*Uses only white keys on piano except one note

#57 Major 5- 6- 7-

LOCRIAN-MAJOR

7-Tones



Intervals: 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1

Formula: M - $\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 7-III:1

Backward: #54 Lydian-minor

Backward MS:SPT: MS 7-III:7

Alternate Names:

Arabian

LOCRIAN-MAJOR

Major-Locrian

Altered:

5-Tone ... #188 Japan. Pent. #2 = Loc.-Maj. 3omit 6omit

#193 Jazz Pentatonic = Loc.-Maj. 4omit 6omit

6-Tone ... #97 Whole Tone = Loc. Maj. 4omit

Ethnic Uses:

Arabia

Source:

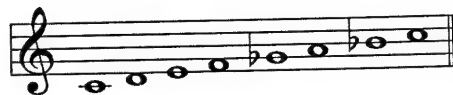
Colin, page 307

C	D	E	F	G \flat	A \flat	B \flat	c
D \flat	E \flat	F	G \flat	G	A	B	d \flat
D	E	F \sharp	G	A \flat	B \flat	C	d
E \flat	F	G	A \flat	A	B	D \flat	e \flat
E	F \sharp	G \sharp	A	B \flat	C	D	e
F	G	A	B \flat	B	D \flat	E \flat	f
F \sharp	G \sharp	A \sharp	B	C	D	E	f \sharp
G	A	B	C	D \flat	E \flat	F	g
A \flat	B \flat	C	D \flat	D	E	G \flat	a \flat
A	B	C \sharp	D	E \flat	F	G	a
B \flat	C	D	E \flat	E	G \flat	A \flat	b \flat
B	C \sharp	D \sharp	E	F	G	A	b

#58 Major 5- 7-

ZENKLA

7-Tones



Intervals: 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1 $\frac{1}{2}$ - $\frac{1}{2}$ -1

Formula: M - $\frac{1}{2}$ - (14)

Modal Series Scale Point Tone: MS 7-X:7

Backward: #42 Greek

Backward MS:SPT: MS 7-IX:1

Alternate Names:

Arabic

ZENKLA (Arabic)

Altered:

5-Tone	...	#179 Pelog #3	= Zenkla 2omit 5omit
		#188 Japan. Pent. #2	= Zenkla 3omit 6omit
		#193 Jazz Pentatonic	= Zenkla 4omit 6omit
		#198 African	= Zenkla 5omit 7omit
6-Tone	...	#98 Prometheus	= Zenkla 4omit
8-Tone	...	#133 Hindu	= Zenkla 5 5+
9-Tone	...	#142 Auxil. Blues	= Zenkla 3- 3 5 5+
		#147 Ryo 9-Tone	= Zenkla 5 5+ 7 7+

Ethnic Uses:

Arabia

Persia

Source:

Daniel, page 183

C D E F G \flat A B \flat c
D \flat E \flat F G \flat G B \flat B d \flat
D E F \sharp G A \flat B C d
E \flat F G A \flat A C D \flat e \flat
E F \sharp G \sharp A B \flat C \sharp D e
F G A B \flat B D E \flat f
F \sharp G \sharp A \sharp B C D \sharp E f \sharp
*G A B C D \flat E F g
A \flat B \flat C D \flat D F G \flat a \flat
A B C \sharp D E \flat F \sharp G a
B \flat C D E \flat E G A \flat b \flat
B C \sharp D \sharp E F G \sharp A b

*Uses only white keys on piano except for one note

#59 Major 5+ 7-

RUMMEL-MEIA (Arabic)

7-Tones



Intervals: $1-1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1$

Formula: M $-1\frac{1}{2}-$ (2)

Modal Series Scale Point Tone: MS 7-IX:7

Backward: #43 Greek

Backward MS:SPT: MS 7-X:1

Alternate Names:

Arabic

RUMMEL-MEIA

Altered:

5-Tone ... #179 Pelog #3 = Ruml.-Meia 2omit 5omit

#198 African = Ruml.-Meia 5omit 7omit

9-Tone ... #144 Aeolian 9-Tone = Ruml.-Meia 3- 3 5- 5

Ethnic Uses:

Arabia

Source:

Daniel, page 246

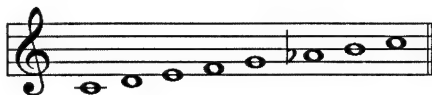
C	D	E	F	G#	A	Bb	c
Db	Eb	F	Gb	A	Bb	B	db
D	E	F#	G	A#	B	C	d
Eb	F	G	Ab	B	C	Db	eb
E	F#	G#	A	C	C#	D	e
F	G	A	Bb	C#	D	Eb	f
F#	G#	A#	B	D	D#	E	f#
*G	A	B	C	D#	E	F	g
Ab	Bb	C	Db	E	F	Gb	ab
A	B	C#	D	F	F#	G	a
Bb	C	D	Eb	F#	G	Ab	bb
B	C#	D#	E	G	G#	A	b

*Uses only white keys on piano except one note.

#60 Major 6-

HARMONIC-MAJOR

7-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$

Formula: M -1- mH

Modal Series Scale Point Tone: MS 7-VIII:4

Backward: #31 Spanish

Backward MS:SPT: MS 7-VII:4

Alternate Names:

HARMONIC-MAJOR

Major Harmonic

Minor-Major

Altered:

5-Tone	...	#180 Pelog #5	= Harm-Major 2omit 6omit
		#189 Semi. Pent. #5	= Harm-Major 3omit 6omit
		#190 Kumoi #4	= Harm-Major 3omit 7omit
		#194 India	= Harm-Major 4omit 6omit
		#195 Japan. Pent. #1	= Harm-Major 4omit 7omit
6-Tone	...	#91 Armenian	= Harm-Major 3omit
8-Tone	...	#134 Bop Scale	= Harm-Major 6 6+

Ethnic Uses:

Armenia
Czechoslovakia
Jewish
Norway
Russia
Turkey

*C D E F G A \flat B c
D \flat E \flat F G \flat A \flat A C d \flat
D E F \sharp G A B \flat C \sharp d
E \flat F G A \flat B \flat B D e \flat
E F \sharp G \sharp A B C D \sharp e
F G A B \flat C D \flat E f
G \flat A \flat B \flat B C \sharp D F g \flat
G A B C D E \flat F \sharp g
A \flat B \flat C D \flat E \flat E G a \flat
A B C \sharp D E F G \sharp a
B \flat C D E \flat F G \flat A b \flat
B C \sharp D \sharp E F \sharp G A \sharp b

Used by:

Brahms: No. 24 Handel Variations

Source:

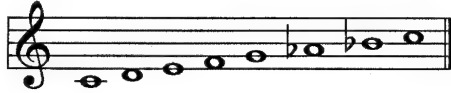
Slonimsky, page 152

*Uses only white keys on piano except one note

#61 Major 6- 7-

HINDUSTAN

7-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1

Formula: M -1- mN

Modal Series Scale Point Tone: MS 7-II:4

Backward: #61 Hindustan (Same Scale)

Backward MS:SPT: MS 6-II:4 (Same)

Alternate Names:

Aeolian Major

HINDUSTAN

Hunayun (Arabic)

Jazz Scale against Dominant 7th chord

Mixolydian 6-

Rahawa

Altered:

- | | | | | |
|--------|-----|------|-----------------|-------------------------|
| 5-Tone | ... | #181 | Semi. Pent. #3 | = Hindustan 2omit 6omit |
| | | #190 | Kumoi #4 | = Hindustan 3omit 7omit |
| | | #191 | Pentatonic #4 | = Hindustan 3omit 6omit |
| | | #195 | Japan. Pent. #1 | = Hindustan 4omit 7omit |
| | | #196 | African | = Hindustan 4omit 6omit |
| 6-Tone | ... | #102 | Mixolydian 6-Tn | = Hindustan 6omit |
| 8-Tone | ... | #122 | Aeolian 8-Tn #1 | = Hindustan 2 2+ |
| | | #122 | Aeolian 8-Tn #1 | = Hindustan 3- 3 |
| 9-Tone | ... | #144 | Aeolian 9-Tone | = Hindustan 2 2+ 6 6+ |
| | | #144 | Aeolian 9-Tone | = Hindustan 3- 3 6 6+ |

Ethnic Uses:

Arabia

Armenia

Byzantia

India (Hindu)

Persia

(cont'd)

#61 Major 6- 7- (cont'd)**HINDUSTAN (cont'd)****7-Tones****Used by:**

Brahms: 4th Symphony

Source:

Szabolcsi, page 166

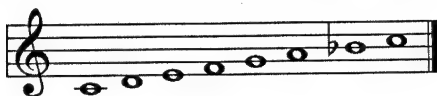
C	D	E	F	G	A \flat	B \flat	c
D \flat	E \flat	F	G \flat	A \flat	A	B	d \flat
D	E	F \sharp	G	A	B \flat	C	d
E \flat	F	G	A \flat	B \flat	B	D \flat	e \flat
E	F \sharp	G \sharp	A	B	C	D	e
F	G	A	B \flat	C	D \flat	E \flat	f
F \sharp	G \sharp	A \sharp	B	C \sharp	D	E	f \sharp
G	A	B	C	D	E \flat	F	g
A \flat	B \flat	C	D \flat	E \flat	E	G \flat	a \flat
*A	B	C \sharp	D	E	F	G	a
B \flat	C	D	E \flat	F	G \flat	A \flat	b \flat
B	C \sharp	D \sharp	E	F \sharp	G	A	b

*Uses only white keys on piano except for one note

#62 Major 7-

MIXOLYDIAN

7-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1
 └───┘ └───┘

Formula: M -1- m

Modal Series Scale Point Tone: MS 7-I:7

Backward: #49 Natural minor (Aeolian)

Backward MS:SPT: MS 7-I:1

Alternate Names:

Adonai Malakh (Jewish)

(with low 7, high 7-; see #149)

Ancient Greek:

Hyperlydian

Hypophrygian

Iastian

Ionian

Arabic

Authentic 7th Mode

Church Mode

Diatonic G Mode

Djorka (Arabic)

Ecclesiastical Modes:

7th Authentic Mode

12th Plagal Mode (if #12 Locrian omitted)

14th Plagal Mode (if #12 Locrian not omitted)

Tetartes

G Diatonic Mode

G Mode

Gandhara (Hindu)

Grave Lydian

Hindu

Hyperlydian (Ancient Greek)

Hypoiastian

Hypoionian

Hypophrygian (Ancient Greek)

(cont'd)

Alternate Names (cont'd):

Iastian (Ancient Greek)
 Ichikosucho, Ryo Scale on D (Japan)
 Ichikosucho, Togaku Mode, System I on D
 Ionian (Ancient Greek)
 Irak (Arabic)
 Jazz Scale against Dominant 7th Chord
 Khammaja (Hindu)
 Major Mode
 MIXOLYDIAN
 Mode of G
 Pelog, Baranq Mode (Java)
 Plagal, 12th Mode (if #12 Locrian omitted)
 Plagal, 14th Mode (if #12 Locrian not omitted)
 Ryo, 7-Tone Scale #2 (Japan)
 Ichikosucho (on D)
 Suicho (on A)
 Taishikicho (on E)
 Shang 7-Tone (China)
 Suicho, Ryo Scale on A (Japan)
 Suicho, Togaku Mode, System II on A (Japan)
 Taishikicho, Ryo Scale on E (Japan)
 Taishikicho, Togaku Mode, System III on E
 Tetartes (Ecclesiastical Mode)
 Togaku Mode (Japan):
 System I, Ichikosucho on D
 System II, Suicho on A
 System III, Taishikicho on E
 Uschak
 'Ushshaq (Arabic)

Altered:

5-Tone	...	#179 Pelog #3	= Mixolydian 2omit 5omit
		#181 Semi. Pent. #3	= Mixolydian 2omit 6omit
		#182 Bulgarian	= Mixolydian 2omit 7omit
		#191 Pentatonic #4	= Mixolydian 3omit 6omit
		#192 Pentatonic #1	= Mixolydian 3omit 7omit
		#196 African	= Mixolydian 4omit 6omit

(cont'd)

#62 Major 7- (cont'd)

MIXOLYDIAN (cont'd)

7-Tones

Altered (cont'd):

5-Tone (cont'd)	...	#197 Pentatonic #3	= Mixolydian 4omit 7omit
		#198 African	= Mixolydian 5omit 7omit
6-Tone	...	#85 Polish	= Mixolydian 2omit
		#95 Appalachian	= Mixolydian 3omit
		#100 Scotch	= Mixolydian 4omit
		#102 Mixolydian 6-Tn	= Mixolydian 6omit
		#103 Guido's	= Mixolydian 7omit
8-Tone	...	#123 Dorian 8-Tn #1	= Mixolydian 3- 3
		#133 Hindu	= Mixolydian 4 4+
		#133 Hindu	= Mixolydian 5- 5
		#136 Mixolydian 8-Tn	= Mixolydian 7 7+
9-Tone	...	#142 Auxil. Blues	= Mixolydian 3- 3 4 4+
		#142 Auxil. Blues	= Mixolydian 3- 3 5- 5
		#144 Aeolian 9-Tone	= Mixolydian 3- 3 6- 6
		#147 Ryo 9-Tone	= Mixolydian 4 4+ 7 7+
		#147 Ryo 9-Tone	= Mixolydian 5- 5 7 7+
		#149 Adonai Malakh	= Mixo. low 7+, high 7
10-Tone	...	#152 Russian liturg.	= Mixolydian 9 10- 11

Ethnic Uses:

African-American Slaves (USA)
 Appalachian Mts., Southern (USA)
 Arabia
 Basque (combined with #50 Dorian, see #33)
 Britain (general)
 China
 Czechoslovakia
 England (10% of folk music)
 Flanders
 France
 Galicia (Spain)
 Greece, Ancient
 Greece, Modern
 Hungary
 India (Hindu)
 Ireland (20% of folk music)

(cont'd)

#62 Major 7- (cont'd)

MIXOLYDIAN (cont'd)

7-Tones

Ethnic Uses (cont'd):

Japan
 Java
 Jewish
 Jewish with 6 \sharp & 7 \sharp below octave, see #149
 Mexico, modern
 Persia
 Poland
 Portugal
 Russian liturgical with 10-, see #152
 Scotch Bagpipe tuning
 Scotland
 Slovakia
 Spain
 Sweden
 Wales

Used by:

Eric Clapton
 Eddie Van Halen
 Manheim Steamrollers

Source:

New International Encyclopaedia
 Volume 16, page 61

*C D E F G A B \flat c
 D \flat E \flat F G \flat A \flat B \flat B d \flat
 *D E F \sharp G A B C d
 E \flat F G A \flat B \flat C D \flat e \flat
 E F \sharp G \sharp A B C \sharp D e
 F G A B \flat C D E \flat f
 F \sharp G \sharp A \sharp B C \sharp D \sharp E f \sharp
 **G A B C D E F g
 A \flat B \flat C D \flat E \flat F G \flat a \flat
 A B C \sharp D E F \sharp G a
 B \flat C D E \flat F G A \flat b \flat
 B C \sharp D \sharp E F \sharp G \sharp A b

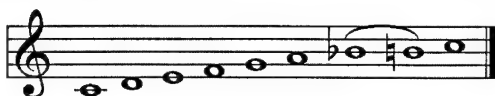
*Uses only white keys on piano except for one note

**Uses only (and all) white keys on piano

#63 Major [7-/7]

NEGRO SPIRITUAL

7-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- [1-1- $\frac{1}{2}$ /1- $\frac{1}{2}$ -1]

Formula: M -1- [M/m]

Combination of:

#1 Major

#62 Mixolydian (Major 7-)

Modal Series Scale Point Tone:

#1 = MS 7-I:3

#62 = MS 7-I:7

Backward:

#1 = #15 Phrygian

#62 = #49 Natural minor

Backward MS:SPT:

#1 = #15 = MS 7-I:5

#62 = #49 = MS 7-I:1

Ethnic Uses:

African-American Slaves (USA)

Source:

Southern, page 191

End of 7-Tone Scales
Continue for 6-Tone Scales

THE GRAND FINALE: Part 2

6-TONE SCALES

This second part of The Grand Finale contains the following 6-Tone Scales (40 Scales):

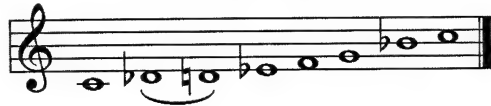
#64	Appalachian	#84	Greek
#65	African	#85	Polish
#66	Blues	#86	Ionian 6-Tone
#67	Vilasakhani	#87	Appalachian
#68	Locrian 6-Tone	#88	Akebono
#69	Hidshaf	#89	Overtone 6-Tone
#70	Gurjari	#90	Aeolian 6-Tone
#71	Abuselik	#91	Armenian, Anct. Church
#72	Phrygian 6-Tone	#92	Greek
#73	In Scale	#93	Glinka's Scale
#74	Samanta	#94	Hungarian
#75	Irish	#95	Appalachian
#76	African	#96	Scotch
#77	Dorian 6-Tone	#97	Whole Tone
#78	Panchana	#98	Prometheus
#79	Prometheus-Neapolitan	#99	Lydian 6-Tone
#80	Augmented	#100	Scotch
#81	Combined-Altered	#101	Appalachian
#82	6-Tone Symmetrical	#102	Mixolydian 6-Tone
#83	Bangala	#103	Guido's Scale

NOTE: Occasionally the order in which "Ethnic Uses" and "Source" is placed within a particular scale's information will differ from "the normal". This is for the reason of making that scale more "readable" by putting the entire scale with its information on only one page (or two opposing pages) rather than two non-opposing pages. However, this isn't always possible to do.

#64 Major [2-/2] 3- 6omit 7-

APPALACHIAN

6-Tones



Intervals: $[1-\frac{1}{2}-1-\frac{1}{2}-1-1]$ - $1-1\frac{1}{2}-1$

Formula: $[m/mN]$ - (11)

Combination of:

#92 Greek (Major 3- 6omit 7-)

-- [Major 2- 3- 6omit 7-; mN - (11)]

Modal Series Scale Point Tone:

#92 = MS 6-III:2

#-- = MS 6- II:4

Backward:

#92 = #95 Appalachian

#-- = #86 Ionian 6-Tone

Backward MS:SPT:

#92 = #95 = MS 6-III:5

#-- = #86 = MS 6- I:3

Alternate Symbols:

MAJOR [2-/2] 3- 6omit 7-

Major 6omit [2-/2] 3- 7-

Major [2-/2] 3- 6+ 7omit

Major 7omit [2-/2] 3- 6+

Alternate Names:

Anglo-American

APPALACHIAN

Ethnic Uses:

Appalachian Mts., Southern (U.S.A.)

#65 Major 2omit 3-

AFRICAN

6-Tones



Intervals: $1\frac{1}{2}$ -1-1 - 1-1- $\frac{1}{2}$

Formula: (16) - M

Modal Series Scale Point Tone: MS 6-XI:1

Backward: #76 African

Backward MS:SPT: MS 6-X:5

Alternate Symbols:

#1 MAJOR 2omit 3-

#6 Neapolitan-Major 2omit

#34 Melodic minor 2omit

Altered:

7-Tone ... #6 Neapolitan-Maj. = African 2-

#34 Melodic minor = African 2

8-Tone ... #130 Dorian 8-Tn #2 = African 2 7- 7

9-Tone ... #143 Bartok's = African 2 3 3+ 5- 5

#145 Dorian 9-Tone = African 2 3 3+ 7- 7

Ethnic Uses:

Black Africa

Source:

Nketia, page 118

*C E \flat F G A B c
 D \flat E G \flat A \flat B \flat C d \flat
 *D F G A B C \sharp d
 E \flat G \flat A \flat B \flat C D e \flat
 E G A B C \sharp D \sharp e
 F A \flat B \flat C D E f
 G \flat A B D \flat E \flat F g \flat
 G B \flat C D E F \sharp g
 A \flat B D \flat E \flat F G a \flat
 A C D E F \sharp G \sharp a
 B \flat D \flat E \flat F G A b \flat
 B D E F \sharp G \sharp A \sharp b

*Uses only white keys on piano except one note

#66 Major 2omit 3- 4 4+ 6omit 7-

BLUES

6-Tones



Intervals: $1\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1

Formula: (15) - (5)

Modal Series Scale Point Tone: MS 6-XIII:1

Backward: --- [Major 3omit 4 4+ 7omit; (10)-(4)]

Backward MS:SPT: MS 6-XII:4

Alternate Symbols:

#1 MAJOR 2omit 3- 4 4+ 6omit 7-

#1 Major 2omit 3- 5- 5 6omit 7-

#1 Major 2omit 3- 4 4+ 6+ 7omit

#1 Major 2omit 3- 5- 5 6+ 7omit

#1 Major 2omit 6omit 3- 4 4+ 7-

#1 Major 2omit 6omit 3- 5- 5 7-

#1 Major 2omit 7omit 3- 4 4+ 6+

#1 Major 2omit 7omit 3- 5- 5 6+

#18 Blues 3omit

#44 Roumanian-minor 2omit 4- 4 6omit

#44 Roumanian-minor 2omit 6omit 4- 4

#50 Dorian 2omit 4 4+ 6omit

#50 Dorian 2omit 5- 5 6omit

#50 Dorian 2omit 6omit 4 4+

#50 Dorian 2omit 6omit 5- 5

Alternate Names:

BLUES

Funky Minor Pentatonic

Altered:

5-Tone ... #159 Kumoi #5 = Blues 5omit
#164 Pentatonic #2 = Blues 4 4+omit

7-Tone ... #18 Blues = Blues 3 3+
#44 Roumanian-min. = Blues 2 4omit 4+ 6
#50 Dorian = Blues 2 4 4+omit 6

9-Tone ... #142 Auxil. Blues = Blues 2 3 3+ 6

(cont'd)

#66 Major 2omit 3- 4 4+ 6omit 7- (cont'd)

BLUES (cont'd)

6-Tones

Ethnic Uses:

Black Americans (USA)

Used by:

Eddie Van Halen

NOTE: This is the "Basic" Blues Scale. Individuals vary it, using this combined with almost any of the other tones in our 12-tone octave.

Source:

Clifford, page 56

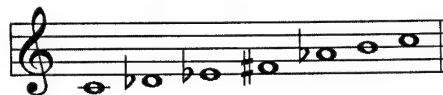
C	E \flat	F	G \flat	G	B \flat	c
D \flat	E	F \sharp	G	A \flat	B	d \flat
*D	F	G	G \sharp	A	C	d
E \flat	F \sharp	G \sharp	A	B \flat	D \flat	e \flat
*E	G	A	B \flat	B	D	e
F	G \sharp	A \sharp	B	C	D \sharp	f
G \flat	A	B	C	D \flat	E	g \flat
G	B \flat	C	D \flat	D	F	g
A \flat	B	C \sharp	D	E \flat	F \sharp	a \flat
*A	C	D	E \flat	E	G	a
B \flat	C \sharp	D \sharp	E	F	A \flat	b \flat
*B	D	E	F	G \flat	A	b

*Uses only white keys on piano except one note

#67 Major 2- 3- 4+ 5omit 6-

VILASAKHANI (Hindu)

6-Tones



Intervals: $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$

Formula: (4) - (10)

Modal Series Scale Point Tone: MS 6-XII:1

Backward: #78 Panchana

Backward MS:SPT: MS 6-XIII:4

Alternate Symbols:

#1 MAJOR 2- 3- 4+ 5omit 6-

#1 Major 2- 3- 4omit 5- 6-

#1 Major 4omit 2- 3- 5- 6-

#1 Major 5omit 2- 3- 4+ 6-

#10 Raga Todi 5omit

Alternate Names:

Hindu

VILASAKHANI

Altered:

5-Tone ... #153 Semi. Pent. #4 = Vilasakhani 7omit

7-Tone ... #10 Raga Todi = Vilasakhani 5

8-Tone ... #115 Zirafkand = Vilasakhani 4- 4 6 6+

#116 'Iraq = Vilasakhani 4- 4 7- 7

C D \flat E \flat G \flat A \flat B c
 *D \flat D E G A C d \flat
 D E \flat F A \flat B \flat C \sharp d
 E \flat E G \flat A B D e \flat
 E F G A \sharp C D \sharp e
 F G \flat A \flat B D \flat E f
 *G \flat G A C D F g \flat
 G A \flat B \flat D \flat E \flat F \sharp g
 *A \flat A B D E G a \flat
 A B \flat C E \flat F G \sharp a
 B \flat B D \flat E G \flat A b \flat
 *B C D F G A \sharp b

Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 148

*Uses only white keys on piano except one note

#68 Major 2- 3- 4omit 5- 6- 7-

LOCRIAN 6-TONE

6-Tones



Intervals: $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-1-1

Formula: (4) - W

Modal Series Scale Point Tone: MS 6-I:2

Backward: --- [Major 4+ 5omit; W-(15)]

Backward MS:SPT: MS 6-II:5

Alternate Symbols:

#1 MAJOR 2- 3- 4omit 5- 6- 7-

#1 Major 4omit 2- 3- 5- 6- 7-

#8 Super-Locrian 4omit

#12 Locrian 4omit

Alternate Names:

LOCRIAN 6-TONE

Scotch

C D \flat E \flat G \flat A \flat B \flat c
 *D \flat D E G A B d \flat
 D E \flat F A \flat B \flat C d
 E \flat E G \flat A B D \flat e \flat
 *E F G A \sharp C D e
 F G \flat A \flat B D \flat E \flat f
 *F \sharp G A C D E f \sharp
 G A \flat B \flat D \flat E \flat F g
 A \flat A B D E G \flat a \flat
 A B \flat C E \flat F G a
 B \flat B D \flat E G \flat A \flat b \flat
 **B C D F G A b

Altered:

5-Tone	...	#153	Semi. Pent #4	=	Locrian 6-Tone 7omit
		#154	Japanese	=	Locrian 6-Tone 2omit
7-Tone	...	#8	Super-Locrian	=	Locrian 6-Tone 4-
		#12	Locrian	=	Locrian 6-Tone 4
8-Tone	...	#105	Locrian 8-Tn #1	=	Locrian 6-Tn 2 2+ 4
		#110	Espla's	=	Locrian 6-Tn 3 3+ 4
		#113	Composite #1	=	Locrian 6-Tn 4- 5 5+
		#114	Locrian 8-Tn #2	=	Locrian 6-Tn 4 5 5+
		#116	'Iraq	=	Locrian 6-Tn 4 7 7+
9-Tone	...	#138	Locrian 9-Tone	=	Loc.6-Tn 2 2+ 4 5 5+

Ethnic Uses:

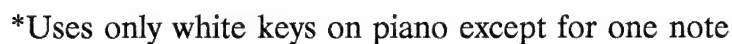
Scotland

Source:

Collinson, page 10

*Uses only white keys on piano except for one note

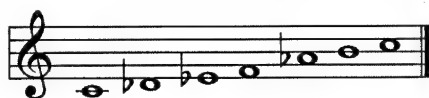
**Uses only white keys on piano



#70 Major 2- 3- 5omit 6-

GURJARI (Hindu)

6-Tones



Intervals: $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$

Formula: mN - (18)

Modal Series Scale Point Tone: MS 6-XVII:1

Backward: --- [Major 2- 4omit; (6)-M]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2- 3- 5omit 6-
- #1 Major 2- 3- 5+ 6omit
- #1 Major 5omit 2- 3- 6-
- #1 Major 6omit 2- 3- 5+
- #14 Neapolitan-minor 5omit

Alternate Names:

GURJARI

Hindu

Altered:

- | | | | | |
|--------|-----|---------------------|---|-----------------|
| 5-Tone | ... | #160 Javanese | = | Gurjari 7omit |
| 7-Tone | ... | #14 Neapolitan-min. | = | Gurjari 5 |
| 8-Tone | ... | #115 Zirafkand | = | Gurjari 5- 6 6+ |
| | | #116 'Iraq | = | Gurjari 5- 7- 7 |

C D \flat E \flat F A \flat B c
 D \flat D E G \flat A C d \flat
 D E \flat F G B \flat C \sharp d
 E \flat E G \flat A \flat B D e \flat
 *E F G A C D \sharp e
 F G \flat A \flat B \flat D \flat E f
 *G \flat G A B D F g \flat
 G A \flat B \flat C E \flat F \sharp g
 A \flat A B D \flat E G a \flat
 A B \flat C D F G \sharp a
 B \flat B D \flat E \flat G \flat A b \flat
 *B C D E G A \sharp b

Ethnic Uses:

Northern India (Hindu)

Source:

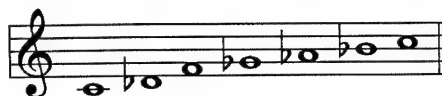
Danielou #2, page 136

*Uses only white keys on piano except one note

#71 Major 2- 3omit 5- 6- 7-

ABUSELIK (Arabic)

6-Tones



Intervals: $\frac{1}{2}$ -2- $\frac{1}{2}$ - 1-1-1

Formula: (d) - W

Modal Series Scale Point Tone: MS 6-IX:1

Backward: --- [Major 4+ 6omit; W-(d)]

Backward MS:SPT: MS 6-IX:6

C D \flat F G \flat A \flat B \flat c
 D \flat D F \sharp G A B d \flat
 D E \flat G A \flat B \flat C d
 E \flat E G \sharp A B D \flat e \flat
 *E F A B \flat C D e
 F G \flat A \sharp B C \sharp D \sharp f
 *F \sharp G B C D E f \sharp
 G A \flat C D \flat E \flat F g
 A \flat A C \sharp D E G \flat a \flat
 A B \flat D E \flat F G a
 B \flat B D \sharp E G \flat A \flat b \flat
 **B C E F G A b

Alternate Symbols:

#1 MAJOR 2- 3omit 5- 6- 7-

#1 Major 3omit 2- 5- 6- 7-

#12 Locrian 3omit

#27 Rahawi 3omit

Alternate Names:

ABUSELIK

Arabic

Altered:

5-Tone	...	#156 Pelog #4	=	Abuselik 7omit
		#157 Hirajoshi #2	=	Abuselik 6omit
7-Tone	...	#12 Locrian	=	Abuselik 3-
		#27 Rahawi	=	Abuselik 3
8-Tone	...	#105 Locrian 8-Tn #1	=	Abuselik 2 2+ 3-
		#110 Espla's	=	Abuselik 3- 3
		#114 Locrian 8-Tn #2	=	Abuselik 3- 5 5+
		#116 'Iraq	=	Abuselik 3- 7 7+
9-Tone	...	#138 Locrian 9-Tone	=	Abusl. 2 2+ 3- 5 5+

Ethnic Uses:

Arabia

Persia

Source:

Daniel, page 183

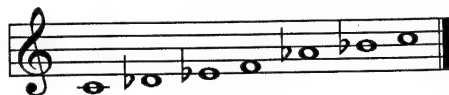
*Uses only white keys on piano except one note

**Uses only white keys on piano

#72 Major 2- 3- 5omit 6- 7-

PHRYGIAN 6-TONE

6-Tones



Intervals: $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1-1

Formula: mN - (16)

Modal Series Scale Point Tone: MS 6-III:3

Backward: #96 Scotch

Backward MS:SPT: MS 6-III:4

Alternate Symbols:

#1 MAJOR 2- 3- 5omit 6- 7-

#1 Major 5omit 2- 3- 6- 7-

#12 Locrian 5omit

#15 Phrygian 5omit

Alternate Names:

Irish

PHRYGIAN 6-TONE

Scotch

Altered:

5-Tone	...	#158 Pentatonic #5	=	Phryg. 6-Tn. 2omit
		#160 Javanese	=	Phryg. 6-Tn. 7omit
7-Tone	...	#12 Locrian	=	Phryg. 6-Tn. 5-
		#15 Phrygian	=	Phryg. 6-Tn. 5
8-Tone	...	#105 Locrian 8-Tn #1	=	Phryg. 6-Tn. 2 2+ 5-
		#106 Phryg. 8-Tn #1	=	Phryg. 6-Tn. 2 2+ 5
		#110 Espla's	=	Phryg. 6-Tn. 3 3+ 5-
		#111 Spanish 8-Tone	=	Phryg. 6-Tn. 3 3+ 5
		#114 Locrian 8-Tn #2	=	Phryg. 6-Tn. 5- 5
9-Tone	...	#117 Phryg. 8-Tn #2	=	Phryg. 6-Tn. 5 6 6+
		#138 Locrian 9-Tone	=	Ph.6-T. 2 2+ 5- 5
		#139 Phrygian 9-Tn	=	Ph.6-T. 2 2+ 5 6 6+

(cont'd)

#72 Major 2- 3- 5om 6- 7- (cont'd)

PHRYGIAN 6-TONE (cont'd)

6-Tones

Ethnic Uses:

Scotland

Ireland

Source:

Flood, page 33

C	D \flat	E \flat	F	A \flat	B \flat	c
D \flat	D	E	G \flat	A	B	d \flat
D	E \flat	F	G	B \flat	C	d
E \flat	E	G \flat	A \flat	B	D \flat	e \flat
**E	F	G	A	C	D	e
F	G \flat	A \flat	B \flat	D \flat	E \flat	f
*F \sharp	G	A	B	D	E	f \sharp
G	A \flat	B \flat	C	E \flat	F	g
A \flat	A	B	D \flat	E	G \flat	a \flat
*A	B \flat	C	D	F	G	a
B \flat	B	D \flat	E \flat	G \flat	A \flat	b \flat
**B	C	D	E	G	A	b

*Uses only white keys on piano except one note

**Uses only white keys on piano

#73 Major 2- 3omit 6- 7-

IN SCALE (Japanese)

6-Tones



Intervals: $\frac{1}{2}$ -2-1 - $\frac{1}{2}$ -1-1

Formula: (e) - mN

Modal Series Scale Point Tone: MS 6-IV:5

Backward: --- [Major 6omit; M-(k)]

Backward MS:SPT: MS 6-V:2

Alternate Symbols:

#1 MAJOR 2- 3omit 6- 7-

#1 Major 3omit 2- 6- 7-

#15 Phrygian 3omit

#31 Spanish 3omit

Alternate Names:

IN SCALE (6-TONE) (Japanese)

Japanese

Altered:

5-Tone	...	#162 Hirajoshi #4	=	In Scale 7omit
		#163 Kumoi #2	=	In Scale 6omit
7-Tone	...	#15 Phrygian	=	In Scale 3-
		#31 Spanish	=	In Scale 3
8-Tone	...	#106 Phryg. 8-Tn #1	=	In Scale 2 2+ 3-
		#111 Spanish 3-Tone	=	In Scale 3- 3
		#114 Locrian 8-Tn #2	=	In Scale 3- 5- 5
		#117 Phryg. 8-Tn #2	=	In Scale 3- 6 6+
9-Tone	...	#138 Locrian 9-Tone	=	In Scl. 2 2+ 3- 5- 5
		#139 Phrygian 9-Tn	=	In Scl. 2 2+ 3- 6 6+

Ethnic Uses:

Japan

C D \flat F G A \flat B \flat c
 D \flat D G \flat A \flat A B d \flat
 D E \flat G A B \flat C d
 E \flat E G \sharp A \sharp B D \flat e \flat
 **E F A B C D e
 F G \flat B \flat C D \flat E \flat f
 F \sharp G B C \sharp D E f \sharp
 G A \flat C D E \flat F g
 A \flat A C \sharp D \sharp E G \flat a \flat
 *A B \flat D E F G a
 B \flat B E \flat F G \flat A \flat b \flat
 *B C E F \sharp G A b

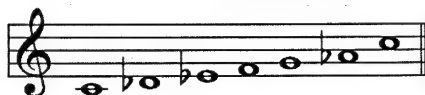
*Uses only white keys on piano except one note

**Uses only white keys on piano

#74 Major 2- 3- 6- 7omit

SAMANTA

6-Tones



Intervals: $\frac{1}{2}$ -1-1 - 1- $\frac{1}{2}$ -2

Formula: mN - (h)

Modal Series Scale Point Tone: MS 6-IX:3

Backward: --- [Major 2omit; (u)-M]

Backward MS:SPT: MS 6-IX:4

Alternate Symbols:

#1 MAJOR 2- 3- 6- 7omit

#1 Major 7omit 2- 3- 6-

#14 Neapolitan-minor 7omit

#15 Phrygian 7omit

Alternate Names:

Hindu

SAMANTA (Hindu)

Altered:

5-Tone	...	#160	Javanese	=	Samanta 5omit
5-Tone	...	#162	Hirajoshi #4	=	Samanta 3omit
7-Tone	...	#14	Neapolitan-min.	=	Samanta 7
		#15	Phrygian	=	Samanta 7-
8-Tone	...	#111	Spanish 8-Tone	=	Samanta 3 3+ 7-
		#117	Phryg. 8-Tn #2	=	Samanta 6 6+ 7-
9-Tone	...	#138	Locrian 9-Tone	=	Samanta 2 2+ 5- 5 7-
		#139	Phrygian 9-Tn.	=	Samanta 2 2+ 6 6+ 7-

C D \flat E \flat F G A \flat c
D \flat D E F \sharp G \sharp A d \flat
D E \flat F G A B \flat d
E \flat E F \sharp G \sharp A \sharp B e \flat
**E F G A B C e
F G \flat A \flat B \flat C D \flat f
F \sharp G A B C \sharp D f \sharp
G A \flat B \flat C D E \flat g
A \flat A B C \sharp D \sharp E a \flat
*A B \flat C D E F a
B \flat B D \flat E \flat F G \flat b \flat
*B C D E F \sharp G b

Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 187

*Uses only white keys on piano except one note

**Uses only white keys on piano

#75 Major 2omit 3- 6- 7-

IRISH

6-Tones



Intervals: $1\frac{1}{2}$ -1-1 - $\frac{1}{2}$ -1-1

Formula: (16) - mN

Modal Series Scale Point Tone: MS 6-III:6

Backward: #103 Guido's

Backward MS:SPT: MS 6-III:1

Alternate Symbols:

- #1 MAJOR 2omit 3- 6- 7-
- #1 Major 2+ 3omit 6- 7-
- #1 Major 3omit 2+ 6- 7-
- #15 Phrygian 2omit
- #49 Natural minor 2omit

Alternate Names:

- Anglo-American
- Appalachian
- IRISH
- Mezmoum (Arabic)

Altered:

5-Tone	...	#158	Pentatonic #5	=	Irish 5omit
		#164	Pentatonic #2	=	Irish 6omit
7-Tone	...	#15	Phrygian	=	Irish 2-
		#49	Natural minor	=	Irish 2
8-Tone	...	#106	Phryg. 8-Tn #1	=	Irish 2- 2
		#111	Spanish 8-Tone	=	Irish 2- 3 3+
		#114	Locrian 8-Tn #2	=	Irish 2- 4 4+
		#114	Locrian 8-Tn #2	=	Irish 2- 5- 5
		#117	Phryg. 8-Tn #2	=	Irish 2- 6 6+
		#122	Aeolian 8-Tn #1	=	Irish 2 3 3+
		#128	Aeolian 8-Tn #2	=	Irish 2 6 6+
		#129	Isfahan	=	Irish 2 7 7+

(cont'd)

#75 Major 2omit 3- 6- 7- (cont'd)

IRISH (cont'd)

6-Tones

Altered (cont'd):

9-Tone ... #138 Locrian 9-Tone = Irish 2- 2 5- 5
 #139 Phrygian 9-Tn = Irish 2- 2 6 6+
 #144 Aeolian 9-Tone = Irish 2 3 3+ 6 6+

Ethnic Uses:

Appalachian Mts., Southern (USA)

Arabia

Ireland

Scotland

Used by:

Debussy

Source:

Collinson, page 10

C E \flat F G A \flat B \flat c
 D \flat E F \sharp G \sharp A B d \flat
 *D F G A B \flat C d
 E \flat F \sharp G \sharp A \sharp B C \sharp e \flat
 **E G A B C D e
 F A \flat B \flat C D \flat E \flat f
 F \sharp A B C \sharp D E f \sharp
 G B \flat C D E \flat F g
 A \flat B C \sharp D \sharp E F \sharp a \flat
 **A C D E F G a
 B \flat D \flat E \flat F G \flat A \flat b \flat
 *B D E F \sharp G A b

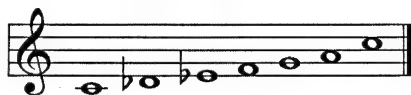
*Uses only white keys on piano except one note

**Uses only white keys on piano

#76 Major 2- 3- 7omit

AFRICAN

6-Tones



Intervals: $\frac{1}{2}$ -1-1 - 1-1-1 $\frac{1}{2}$

Formula: mN - (9)

Modal Series Scale Point Tone: MS 6-X:5

Backward: #65 African

Backward MS:SPT: MS XI:1

Alternate Symbols:

#1 MAJOR 2- 3- 7omit

#1 Major 7omit 2- 3-

#6 Neapolitan-Major 7omit

#16 Javanese 7omit

Altered:

5-Tone ... #165 Japan. Pent. #4 = African 3omit

#166 Jazz min. Pent. = African 2omit

7-Tone ... #6 Neapolitan-Maj. = African 7

#16 Javanese = African 7-

8-Tone ... #112 Latin American = African 3 3+ 7-

#117 Phryg. 8-Tn #2 = African 6- 6 7-

C D \flat E \flat F G A c
 D \flat D E G \flat A \flat B \flat d \flat
 *D E \flat F G A B d
 E \flat E G \flat A \flat B \flat C e \flat
 E F G A B C \sharp e
 F G \flat A \flat B \flat C D f
 F \sharp G A B C \sharp D \sharp f \sharp
 G A \flat B \flat C D E g
 A \flat A B D \flat E \flat F a \flat
 A B \flat C D E F \sharp a
 B \flat B D \flat E \flat F G b \flat
 B C D E F \sharp G \sharp b

Ethnic Uses:

Black Africa

Source:

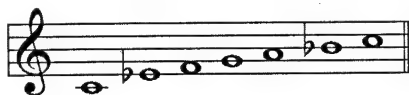
Nketia, page 118

*Uses only white keys on piano except one note

#77 Major 2omit 3- 7-

DORIAN 6-TONE (Appalachian)

6-Tones



Intervals: $1\frac{1}{2}$ -1-1 - $1-\frac{1}{2}$ -1

Formula: (16) - m

Modal Series Scale Point Tone: MS 6-I:4

Backward: #94 Hungarian

Backward MS:SPT: MS 6-II:3

Alternate Symbols:

#1 MAJOR 2omit 3- 7-

#1 Major 2+ 3omit 7-

#1 Major 3omit 2+ 7-

#16 Javanese 2omit

#32 Roumanian-Major 3omit

#50 Dorian 2omit

Alternate Names:

Anglo-American

Appalachian

Blues

DORIAN 6-TONE

Altered:

5-Tone	...	#161	Semi. Pent. #1	=	Dorian 6-Tn. 5omit
		#166	Jazz min. Pent.	=	Dorian 6-Tn. 7omit
7-Tone	...	#16	Javanese	=	Dorian 6-Tn. 2-
		#32	Roumanian-Maj.	=	Dorian 6-Tn. 3 3+
		#50	Dorian	+	Dorian 6-To. 2
8-Tone	...	#112	Latin American	=	Dorian 6-Tn. 2- 3 3+
		#117	Phryg. 8-Tn #2	=	Dorian 6-Tn. 2- 6- 6
		#123	Dorian 8-Tn #1	=	Dorian 6-Tn. 2 3 3+
		#128	Aeolian 8-Tn #2	=	Dorian 6-Tn. 2 6- 6
		#130	Dorian 8-Tn. #2	=	Dorian 6-Tn. 2 7 7+
9-Tone	...	#139	Phrygian 9-Tn.	=	Dor. 6-T. 2- 2 6- 6
		#144	Aeolian 9-Tone	=	Dor. 6-T. 2 3 3+ 6- 6
		#145	Dorian 9-Tone	=	Dor. 6-T. 2 3 3+ 7 7+
		#146	Armenian	=	Dor. 6-T. 2 9- 10-

(cont'd)

#77 Major 2om 3- 7- (cont'd)

DORIAN 6-TONE (Appalachian) (cont'd)

6-Tones

Ethnic Uses:

Appalachian Mts., Southern (USA)

Scotland

Source:

Collinson, page 10

C	E \flat	F	G	A	B \flat	c
D \flat	E	F \sharp	G \sharp	A \sharp	B	d \flat
**D	F	G	A	B	C	d
E \flat	G \flat	A \flat	B \flat	C	D \flat	e \flat
*E	G	A	B	C \sharp	D	e
F	A \flat	B \flat	C	D	E \flat	f
F \sharp	A	B	C \sharp	D \sharp	E	f \sharp
*G	B \flat	C	D	E	F	g
A \flat	B	D \flat	E \flat	F	G \flat	a \flat
*A	C	D	E	F \sharp	G	a
B \flat	D \flat	E \flat	F	G	A \flat	b \flat
B	D	E	F \sharp	G \sharp	A	b

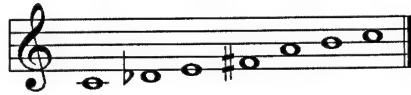
*Uses only white keys on piano except one note

**Uses only white keys on piano

#78 Major 2- 4+ 5omit

PANCHANA (Hindu)

6-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: (5) - (15)

Modal Series Scale Point Tone: MS 6-XIII:4

Backward: #67 Vilasakhani

Backward MS:SPT: MS 6-XII:1

Alternate Symbols:

#1 MAJOR 2- 4+ 5omit

#1 Major 2- 4omit 5-

#1 Major 4omit 2- 5-

#1 Major 5omit 2- 4+

#17 Marava 5omit

#23 Chromatic Lydian 4omit

Alternate Names:

Hindu

Marava

PANCHANA

Altered:

5-Tone	...	#172 Vibhasa	=	Panchana 7omit
7-Tone	...	#17 Marava	=	Panchana 5
		#23 Chrom. Lydian	=	Panchana 4- 4
8-Tone	...	#107 Hindu	=	Panchana 2 2+ 5
		#118 Buzurg	=	Panchana 4- 4 5
		#120 Irak	=	Panchana 4- 4 5+
9-Tone	...	#140 Hindu	=	Panchn. 2 2+ 4- 4 5
		#141 Hindu	=	Panchn. 2 2+ 5 5+

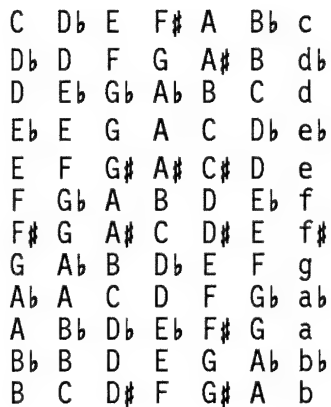
Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 244

*Uses only white keys on piano except for one note



#80 Major 2+ 4omit 6-

AUGMENTED

6-Tones



Intervals: $1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2} - \frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$

Formula: Aug - mH

Modal Series Scale Point Tone: MS 6-VII:2,4,& 6

Backward: #82 6-Tone Symmetrical

Backward MS:SPT: MS. 6-VII:1, 3, & 5

Actual Spelling: Major 2omit 3- 3 4omit 5 5+ 6omit

Alternate Symbols:

#1 MAJOR 2+ 4omit 6-

#1 Major 2omit 3- 3 4omit 5 5+ 6omit

#1 Major 2omit 3- 3 4omit 6-

#1 Major 2omit 4omit 6omit 3- 3 5 5+

#1 Major 2omit 4omit 3- 3 6-

#1 Major 4omit 2+ 6-

Ethnic Uses: ---

Source:

Given to me by Bud Conway

C	D#	E	G	A \flat	B	c
D \flat	E	F	A \flat	A	C	d \flat
D	F	F#	A	B \flat	C#	d
E \flat	F#	G	A#	B	D	e \flat
E	G	A \flat	B	C	D#	e
F	G#	A	C	D \flat	E	f
G \flat	A	B \flat	C#	D	F	g \flat
G	A#	B	D	E \flat	F#	g
A \flat	B	C	D#	E	G	a \flat
A	C	D \flat	E	F	G#	a
B \flat	C#	D	F	G \flat	A	b \flat
B	D	E \flat	F#	G	A#	b

#81 Major 2- 4+ 6- 7omit

COMBINED-ALTERED (Hindu)

6-Tones



Intervals: $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -2

Formula: (5) - (a)

Modal Series Scale Point Tone: MS 6-XVI:1

Backward: --- [Major 2omit 5- 6-; (t)-(10)]

Backward MS:SPT: ---

Alternate Symbols:

#1 MAJOR 2- 4+ 6- 7omit

#1 Major 7omit 2- 4+ 6-

#20 Chromatic Hypolydian 7omit

Alternate Names:

COMBINED-ALTERED (Hindu)

Hindu, Combined-Altered

Altered:

5-Tone	...	#175 Rewa	=	Comb-Alt 4omit
7-Tone	...	#20 Chrm. Hypolyd.	=	Comb-Alt 7
9-Tone	...	#141 Hindu	=	Comb-Alt 2 2+ 6 6+ 7

Ethnic Uses:

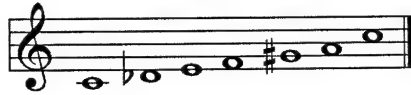
India (Hindu)

C	D \flat	E	F \sharp	G	A \flat	c
D \flat	D	F	G	A \flat	A	d \flat
D	E \flat	F \sharp	G \sharp	A	B \flat	d
E \flat	E	G	A	B \flat	B	e \flat
E	F	G \sharp	A \sharp	B	C	e
F	G \flat	A	B	C	D \flat	f
F \sharp	G	A \sharp	C	C \sharp	D	f \sharp
G	A \flat	B	C \sharp	D	E \flat	g
A \flat	A	C	D	E \flat	E	a \flat
A	B \flat	D \flat	E \flat	E	F	a
B \flat	B	D	E	F	G \flat	b \flat
B	C	E \flat	F	F \sharp	G	b

#82 Major 2- 5+ 7omit

6-TONE SYMMETRICAL

6-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$

Formula: mH - Aug

Modal Series Scale Point Tone: MS 6-VII:1,3,&5

Backward: #80 Augmented

Backward MS:SPT: MS 6-VII:2, 4, & 6

Alternate Symbols:

#1 MAJOR 2- 5+ 7omit

#1 Major 7omit 2- 5+

Alternate Names:

Bartok's Model 1:3

Symmetrical 6-Tone

6-TONE SYMMETRICAL

Ethnic Uses: ---

Source:

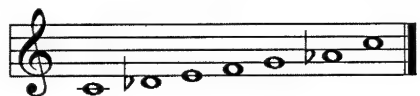
Persichetti, page 53

C	D \flat	E	F	G \sharp	A	c
D \flat	D	F	G \flat	A	B \flat	d \flat
D	E \flat	F \sharp	G	A \sharp	B	d
E \flat	E	G	A \flat	B	C	e \flat
E	F	G \sharp	A	C	D \flat	e
F	G \flat	A	B \flat	C \sharp	D	f
F \sharp	G	A \sharp	B	D	E \flat	f \sharp
G	A \flat	B	C	D \sharp	E	g
A \flat	A	C	D \flat	E	F	a \flat
A	B \flat	C \sharp	D	F	G \flat	a
B \flat	B	D	E \flat	F \sharp	G	b \flat
B	C	D \sharp	E	G	A \flat	b

#83 Major 2- 6- 7omit

BANGALA (Hindu)

6-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 2

Formula: mH - (h)

Modal Series Scale Point Tone: MS 6-XVIII:1

Backward: --- [Major 2omit 6-; (u) - mH]

Backward MS:SPT: ---

Alternate Symbols:

#1 MAJOR 2- 6- 7omit

#1 Major 7omit 2- 6-

#30 Double Harmonic 7omit

#31 Spanish 7omit

Alternate Names:

BANGALA
Hindu

Altered:

5-Tone ... #162 Hirajoshi #4 = Bangala 3omit

#175 Rewa = Bangala 4omit

7-Tone ... #30 Dbl. Harmonic = Bangala 7

#31 Spanish = Bangala 7-

8-Tone ... #111 Spanish 8-Tone = Bangala 3- 3 7-

C D \flat E F G A \flat c
D \flat D F G \flat A \flat A d \flat
D E \flat F \sharp G A B \flat d
E \flat E G A \flat B \flat B e \flat
*E F G \sharp A B C e
F G \flat A B \flat C D \flat f
F \sharp G A \sharp B C \sharp D f \sharp
G A \flat B C D E \flat g
A \flat A C D \flat E \flat E a \flat
A B \flat C \sharp D E F a
B \flat B D E \flat F G \flat b \flat
B C D \sharp E F \sharp G b

Ethnic Uses:

Northern India (Hindu)

Portugal

Source:

Danielou #2, page 122

*Uses only white piano keys except for one note

#84 Major 2- 6omit 7-

GREEK

6-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $1\frac{1}{2}$ - 1

Formula: mH - (11)

Modal Series Scale Point Tone: MS 6-VI:2

Backward: #91 Armenian Church (Ancient)

Backward MS:SPT: MS 6-VI:5

Alternate Symbols:

#1 MAJOR 2- 6omit 7-

#1 Major 2- 6+ 7omit

#1 Major 6omit 2- 7-

#1 Major 7omit 2- 6+

#31 Spanish 6omit

#33 Arabic 6omit

Altered:

5-Tone ... #163 Kumoi #2 = Greek 3omit

#176 Dominant Pent. = Greek 4omit

#181 Semi. Pent. #3 = Greek 2omit

7-Tone ... #31 Spanish = Greek 6-

#33 Arabic = Greek 6

8-Tone ... #111 Spanish 8-Tone = Greek 3- 3 6-

#112 Latin American = Greek 3- 3 6

C D \flat E F G B \flat c
D \flat D F G \flat A \flat B d \flat
D E \flat F \sharp G A C d
E \flat E G A \flat B \flat D \flat e \flat
*E F G \sharp A B D e
F G \flat A B \flat C E \flat f
F \sharp G A \sharp B C \sharp E f \sharp
*G A \flat B C D F g
A \flat A C D \flat E \flat G \flat a \flat
A B \flat C \sharp D E G a
B \flat B D E \flat F A \flat b \flat
B C D \sharp E F \sharp A b

Ethnic Uses:

Greece (modern)

Used by:

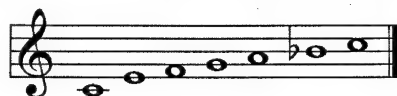
John McLaughlin

*Uses only white piano keys except one note

#85 Major 2omit 7-

POLISH

6-Tones



Intervals: 2- $\frac{1}{2}$ -1 - 1- $\frac{1}{2}$ -1

Formula: (u) - m

Modal Series Scale Point Tone: MS 6-V:6

Backward: #93 Glinka's

Backward MS:SPT: MS 6-IV:1

Alternate Symbols:

- #1 MAJOR 2omit 7-
- #32 Roumanian-Major 2omit
- #33 Arabic 2omit
- #62 Mixolydian 2omit

Altered:

- | | | | | | |
|---------|-----|------|-----------------|---|--------------------|
| 5-Tone | ... | #181 | Semi. Pent. #3 | = | Polish 6omit |
| | | #182 | Bulgarian | = | Polish 7omit |
| 7-Tone | ... | #32 | Roumanian-Maj. | = | Polish 2+ |
| | | #33 | Arabic | = | Polish 2- |
| | | #62 | Mixolydian | = | Polish 2 |
| 8-Tone | ... | #112 | Latin American | = | Polish 2- 3- 3 |
| | | #123 | Dorian 8-Tn #1 | = | Polish 2 3- 3 |
| | | #133 | Hindu | = | Polish 2 5- 5 |
| | | #136 | Mixolydian 8-Tn | = | Polish 2 7 7+ |
| 9-Tone | ... | #144 | Aeolian 9-Tone | = | Polish 2 3- 3 6- 6 |
| | | #145 | Dorian 9-Tone | = | Polish 2 3- 3 7 7+ |
| | | #147 | Ryo 9-Tone | = | Polish 2 4 4+ 7 7+ |
| | | #149 | Adonai Malakh | = | Polish low 6 7+, 2 |
| 10-Tone | ... | #152 | Russian, lit. | = | Polish 2 9 10- 11 |

Ethnic Uses:

Poland

*C E F G A Bb c
 Db F Gb Ab Bb B db
 *D F# G A B C d
 Eb G Ab Bb C Db eb
 E G# A B C# D e
 F A Bb C D Eb f
 F# A# B C# D# E f#
 **G B C D E F g
 Ab C Db Eb F Gb ab
 A C# D E F# G a
 Bb D Eb F G Ab bb
 B D# E F# G# A b

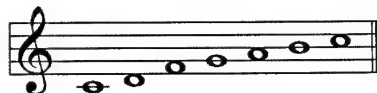
*Uses only white piano keys except for one note

**Uses only white piano keys

#86 Major 3omit

IONIAN 6-TONE (Appalachian)

6-Tones



Intervals: 1-1½-1 - 1-1-½

Formula: (11) - M

Modal Series Scale Point Tone: MS 6-I:3

Backward: --- (Half of Comb. Schl. #64)

[Major 2- 3- 6omit 7-; mN-(11)]

Backward MS:SPT: MS 6-II:4

Alternate Symbols:

#1 MAJOR 3omit

#34 Melodic minor 3omit

Alternate Names:

Anglo-American

Appalachian

IONIAN 6-TONE

**C D F G A B c
 Db Eb Gb Ab Bb C db
 *D E G A B C# d
 Eb F Ab Bb C D eb
 E F# A B C# D# e
 *F G Bb C D E f
 Gb Ab B Db Eb F gb
 *G A C D E F# g
 Ab Bb Db Eb F G ab
 A B D E F# G# a
 Bb C Eb F G A bb
 B C# E F# G# A# b

Altered:

5-Tone	...	#189	Semi. Pent. #5	=	Ionian 6-Tn. 6omit
		#192	Pentatonic #1	=	Ionian 6-Tn. 7omit
7-Tone	...	#1	Major	=	Ionian 6-Tn. 3
		#34	Melodic minor	=	Ionian 6-Tn. 3-
8-Tone	...	#104	Hindu	=	Ionian 6-Tn. 2- 2 3
		#127	Arabic	=	Ionian 6-Tn. 3- 6- 6
		#130	Dorian 8-Tn. #2	=	Ionian 6-Tn. 3- 7- 7
		#131	Ryo 8-Tone	=	Ionian 6-Tn. 3 4 4+
		#136	Mixolydian 8-Tn	=	Ionian 6-Tn. 3 7- 7
9-Tone	...	#140	Hindu	=	Ion. 6-Tn. 2- 2 3 4 4+
		#143	Bartok's 9-Tone	=	Ion. 6-Tn. 3- 3 5- 5
		#145	Dorian 9-Tone	=	Ion. 6-Tn. 3- 3 7- 7
		#147	Ryo 9-Tone	=	Ion. 6-Tn. 3 4 4+ 7- 7

Ethnic Uses:

Appalachian Mts., Southern (USA)

Scotland

*Uses only white piano

keys except one note

**Uses only white piano keys

Source:

Collinson, page 10

#87 Major [3-/3] 7omit

APPALACHIAN

6-Tones



Intervals: $[1-1-\frac{1}{2}/1-\frac{1}{2}-1]$ - $1-1-1\frac{1}{2}$

Formula: $[M/m]$ - (9)

Combination of:

#94 Hungarian (Major 3- 7omit) &
#103 Guido's (Major 7omit)

Modal Series Scale Point Tone:

#94 = MS 6-II:3
#103 = MS 6-III:1

Backward:

#94 = #77 Appalachian
#103 = #75 Irish

Backward MS:SPT:

#94 = #77 = MS 6-I:4
#103 = #75 = MS 6-III:6

Alternate Symbols:

#1 MAJOR [3-/3] 7omit
#1 Major 7omit [3-/3]

Alternate Names:

Anglo-American
APPALACHIAN

Ethnic Uses:

Appalachian Mts., Southern (USA)

#88 Major 3- 4omit 7-

AKEBONO (Japanese)

6-Tones



Intervals: 1- $\frac{1}{2}$ -2 - 1- $\frac{1}{2}$ -1

Formula: (h) - m

Modal Series Scale Point Tone: MS 6-IV:4

Backward: --- [Major 3- 5omit 7-; m-(u)]

Backward MS:SPT: MS 6-V:3

C D E \flat G A B \flat c
 D \flat E \flat E A \flat B \flat B d \flat
 **D E F A B C d
 E \flat F G \flat B \flat C D \flat e \flat
 E F \sharp G B C \sharp D e
 F G A \flat C D E \flat f
 F \sharp G \sharp A C \sharp D \sharp E f \sharp
 *G A B \flat D E F g
 A \flat B \flat B E \flat F G \flat a \flat
 *A B C E F \sharp G a
 B \flat C D \flat F G A \flat b \flat
 B C \sharp D F \sharp G \sharp A b

Alternate Symbols:

#1 MAJOR 3- 4omit 7-

#1 Major 4omit 3- 7-

#44 Roumanian-minor 4omit

#50 Dorian 4omit

Alternate Names:

AKEBONO (Japanese)

Japanese

Altered:

5-Tone	...	#185 African	=	Akebono 6omit
		#186 Kumoi #1	=	Akebono 7omit
7-Tone	...	#44 Roumanian-min.	=	Akebono 4+
		#50 Dorian	=	Akebono 4
8-Tone	...	#121 Jobim's	=	Akebono 3 3+ 4+
		#123 Dorian 8-Tn #1	=	Akebono 3 3+ 4
		#128 Aeolian 8-Tn #2	=	Akebono 4 6- 6
		#130 Dorian 8-Tn #2	=	Akebono 4 7 7+
9-Tone	...	#139 Phrygian 9-Tn	=	Akebono 2- 2 4 6- 6
		#142 Auxiliary Blues	=	Akebono 3 3+ 4 4+
		#144 Aeolian 9-Tone	=	Akebono 3 3+ 4 6- 6
		#145 Dorian 9-Tone	=	Akebono 3 3+ 4 7 7+
		#146 Armenian,Ant.Ch	=	Akebono 4 9- 10-

Ethnic Uses:

Japan

*Uses only white piano
 keys except one note

**Uses only white piano keys

Source:

Piggott, page 67

#89 Major 3omit 4+ 7-

OVERTONE 6-TONE

6-Tones



Intervals: 1-2- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: (k) - m

Modal Series Scale Point Tone: MS 6-XIX:1

Backward: --- [Major 3- 5- 6omit; m-(e)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 3omit 4+ 7-
- #44 Roumanian-minor 3omit
- #55 Overtone 3omit

Alternate Names:

OVERTONE 6-TONE

Scotch

Altered:

5-Tone	...	#187	Semi. Pent. #2	=	Overtone 6-Tn. 7omit
7-Tone	...	#44	Roumanian-min.	=	Overtone 6-Tn. 3-
		#55	Overtone	=	Overtone 6-Tn. 3
8-Tone	...	#121	Jobim's	=	Overtone 6-Tn. 3- 3
		#133	Hindu	=	Ovrtn 6-Tn 3 4- 4
9-Tone	...	#142	Auxiliary Blues	=	Ovrtn 6-Tn 3- 3 4- 4
		#147	Ryo 9-Tone	=	Ovrtn 6-T 3 4- 4 7 7+

Ethnic Uses:

Scotland

Source:

Collinson, page 27

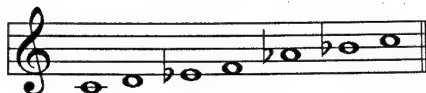
C D F# G A Bb c
 Db Eb G Ab Bb B db
 *D E G# A B C d
 Eb F A Bb C Db eb
 E F# A# B C# D e
 *F G B C D Eb f
 Gb Ab C Db Eb E gb
 *G A C# D E F g
 Ab Bb D Eb F Gb ab
 A B D# E F# G a
 Bb C E F G Ab bb
 B C# F F# G# A b

*Uses only white keys on piano except for one note

#90 Major 3- 5omit 6- 7-

AEOLIAN 6-TONE (Appalachian)

6-Tones



Intervals: $1-\frac{1}{2}-1$ - $1\frac{1}{2}-1-1$

Formula: m - (16)

Modal Series Scale Point Tone: MS 6-I:1

Backward: #100 Scotch

Backward MS:SPT: MS 6-II:6

Alternate Symbols:

- #1 MAJOR 3- 5omit 6- 7-
- #1 Major 3- 5+ 6omit 7-
- #1 Major 3- 5+ 6+ 7omit
- #1 Major 5omit 3- 6- 7-
- #1 Major 6omit 3- 5+ 7-
- #1 Major 7omit 3- 5+ 6+
- #45 Half-Diminished 5omit
- #49 Natural minor (Aeolian) 5omit

Alternate Names:

AEOLIAN 6-TONE
Anglo-American
Appalachian
Scotch

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|------------------------|
| 5-Tone | ... | #158 | Pentatonic #5 | = | Aeolian 6-Tn. 2omit |
| 7-Tone | ... | #45 | Half-Diminished | = | Aeolian 6-Tn. 5- |
| | | #49 | Natural minor | = | Aeolian 6-Tn. 5 |
| 8-Tone | ... | #105 | Locrian 8-Tn #1 | = | Aeolian 6-Tn. 2- 2 5- |
| | | #106 | Phryg. 8-Tn #1 | = | Aeolian 6-Tn. 2- 2 5 |
| | | #122 | Aeolian 8-Tn #1 | = | Aeolian 6-Tn. 3 3+ 5 |
| | | #128 | Aeolian 8-Tn #2 | = | Aeolian 6-Tn. 5 6 6+ |
| | | #129 | Isfahan | = | Aeolian 6-Tn. 5 7 7+ |
| | | #135 | Magon Abot | = | Aeol. 6-T. low 7+, 5 7 |

(cont'd)

#90 Major 3- 5omit 6- 7- (cont'd)	AEOLIAN 6-TONE (cont'd)	6-Tones
--	--------------------------------	----------------

Altered (cont'd):

9-Tone ... #138 Locrian 9-Tone = Aeol. 6-T. 2- 2 5- 5
 #139 Phrygian 9-Tn. = Aeol. 6-T. 2- 2 5 6 6+
 #144 Aeolian 9-Tone = Aeol. 6-T. 3 3+ 5 6 6+

Ethnic Uses:

Appalachian Mts., Southern (USA)
 Scotland

Source:

Collinson, page 10

C	D	E \flat	F	A \flat	B \flat	c
D \flat	E \flat	E	G \flat	A	B	d \flat
*D	E	F	G	B \flat	C	d
E \flat	F	G \flat	A \flat	B	D \flat	e \flat
*E	F \sharp	G	A	C	D	e
F	G	A \flat	B \flat	D \flat	E \flat	f
F \sharp	G \sharp	A	B	D	E	f \sharp
G	A	B \flat	C	E \flat	F	g
A \flat	B \flat	B	D \flat	E	G \flat	a \flat
**A	B	C	D	F	G	a
B \flat	C	D \flat	E \flat	G \flat	A \flat	b \flat
*B	C \sharp	D	E	G	A	b

*Uses only white piano keys except one note

**Uses only white piano keys



*Uses only white piano keys except for one note

#92 Major 3- 6omit 7-

GREEK

6-Tones



Intervals: $1-\frac{1}{2}-1$ - $1-1\frac{1}{2}-1$

Formula: m - (11)

Modal Series Scale Point Tone: MS 6-III:2

Backward: #95 Appalachian

Backward MS:SPT: MS 6-III:5

Alternate Symbols:

- #1 MAJOR 3- 6omit 7-
- #1 Major 3- 6+ 7omit
- #1 Major 6omit 3- 7-
- #1 Major 7omit 3- 6+
- #49 Natural minor 6omit
- #50 Dorian 6omit

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|--------------------|
| 5-Tone | ... | #164 | Pentatonic #2 | = | Greek 2omit |
| | | #185 | African | = | Greek 4omit |
| | | #191 | Pentatonic #4 | = | Greek 3omit |
| 7-Tone | ... | #49 | Natural minor | = | Greek 6- |
| | | #50 | Dorian | = | Greek 6 |
| 8-Tone | ... | #106 | Phryg. 8-Tn. #1 | = | Greek 2- 2 6- |
| | | #122 | Aeolian 8-Tn #1 | = | Greek 3 3+ 6- |
| | | #123 | Dorian 8-Tn. #1 | = | Greek 3 3+ 6 |
| | | #128 | Aeolian 8-Tn #2 | = | Greek 6- 6 |
| | | #129 | Isfahan | = | Greek 6- 7 7+ |
| | | #130 | Dorian 8-Tn #2 | = | Greek 6 7 7+ |
| | | #135 | Magon Abot | = | Greek low 7+, 6- 7 |
| 9-Tone | ... | #138 | Locrian 9-Tone | = | Greek 2- 2 5- 5 6- |
| | | #139 | Phrygian 9-Tn. | = | Greek 2- 2 6- 6 |
| | | #144 | Aeolian 9-Tone | = | Greek 3 3+ 6- 6 |

(cont'd)

#92 Major 3- 6omit 7- (cont'd)**GREEK (cont'd)**

6-Tones

Ethnic Uses:

American Indians (North America)

England

Greece

Hungary

Scotland

Slovakia

Used by:

Debussy

Ravel

Source:

Collinson, page 10

C	D	E \flat	F	G	B \flat	c
D \flat	E \flat	E	G \flat	A \flat	B	d \flat
**D	E	F	G	A	C	d
E \flat	F	G \flat	A \flat	B \flat	D \flat	e \flat
*E	F \sharp	G	A	B	D	e
F	G	A \flat	B \flat	C	E \flat	f
F \sharp	G \sharp	A	B	C \sharp	E	f \sharp
*G	A	B \flat	C	D	F	g
A \flat	B \flat	B	D \flat	E \flat	G \flat	a \flat
**A	B	C	D	E	G	a
B \flat	C	D \flat	E \flat	F	A \flat	b \flat
B	C \sharp	D	E	F \sharp	A	b

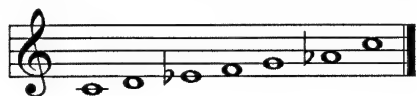
*Uses only white piano keys except for one note

**Uses only white piano keys

#93 Major 3- 6- 7omit

GLINKA'S SCALE

6-Tones



Intervals: $1-\frac{1}{2}-1$ - $1-\frac{1}{2}-2$

Formula: m - (h)

Modal Series Scale Point Tone: MS 6-IV:1

Backward: #85 Polish

Backward MS:SPT: MS 6-V:6

Alternate Symbols:

- #1 MAJOR 3- 6- 7omit
- #1 Major 7omit 3- 6-
- #47 Harmonic minor 7omit
- #48 Ptolemy's 6- 6omit
- #49 Natural minor 7omit

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|-------------------------|
| 5-Tone | ... | #184 | Hirajoshi #1 | = | Glinka's 4omit |
| | | #190 | Kumoi #4 | = | Glinka's 3omit |
| 7-Tone | ... | #47 | Harmonic minor | = | Glinka's 7 |
| | | #48 | Ptolemy's | = | Glinka's 6 6+ |
| | | #49 | Natural minor | = | Glinka's 7- |
| 8-Tone | ... | #106 | Phryg. 8-Tn. #1 | = | Glinka's 2- 2 7- |
| | | #122 | Aeolian 8-Tn #1 | = | Glinka's 3 3+ 7- |
| | | #127 | Arabic | = | Glinka's 6 6+ 7 |
| | | #128 | Aeolian 8-Tn #2 | = | Glinka's 6 6+ 7- |
| | | #129 | Isfahan | = | Glinka's 7- 7 |
| | | #135 | Magon Abot | = | Glinka's low 7, high 7- |
| 9-Tone | ... | #138 | Locrian 9-Tone | = | Glinka's 2- 2 5- 5 7- |
| | | #139 | Phrygian 9-Tn. | = | Glinka's 2- 2 6 6+ 7- |
| | | #144 | Aeolian 9-Tone | = | Glinka's 3 3+ 6 6+ 7- |

(cont'd)

#93 Major 3- 6- 7omit (cont'd)**GLINKA'S SCALE (cont'd)**

6-Tones

Ethnic Uses:Japan
Russia**Used by:**Debussy
Glinka**Source:**

Vincent, page 249

C	D	E \flat	F	G	A \flat	c
D \flat	E \flat	E	F \sharp	G \sharp	A	d \flat
*D	E	F	G	A	B \flat	d
E \flat	F	G \flat	A \flat	B \flat	B	e \flat
*E	F \sharp	G	A	B	C	e
F	G	A \flat	B \flat	C	D \flat	f
F \sharp	G \sharp	A	B	C \sharp	D	f \sharp
G	A	B \flat	C	D	E \flat	g
A \flat	B \flat	B	C \sharp	D \sharp	E	a \flat
**A	B	C	D	E	F	a
B \flat	C	D \flat	E \flat	F	G \flat	b \flat
B	C \sharp	D	E	F \sharp	G	b

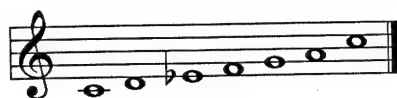
*Uses only white keys on piano except for one note

**Uses only white keys on piano

#94 Major 3- 7omit

HUNGARIAN

6-Tones



Intervals: $1-\frac{1}{2}-1$ - $1-1-1\frac{1}{2}$

Formula: m - (9)

Modal Series Scale Point Tone: MS 6-II:3

Backward: #77 Dorian 6-Tone

Backward MS:SPT: MS 6-I:4

Alternate Symbols:

- #1 MAJOR 3- 7omit
- #1 Major 7omit 3-
- #34 Melodic minor 7omit
- #50 Dorian 7omit

Altered:

- | | | | | |
|--------|-----|----------------------|---|-----------------------|
| 5-Tone | ... | #166 Jazz min. Pent. | = | Hungarian 2omit |
| | | #192 Pentatonic #1 | = | Hungarian 3omit |
| 7-Tone | ... | #34 Melodic minor | = | Hungarian 7 |
| | | #50 Dorian | = | Hungarian 7- |
| 8-Tone | ... | #123 Dorian 8-Tn. #1 | = | Hungarian 3 3+ 7- |
| | | #127 Arabic | = | Hungarian 6- 6 7 |
| | | #128 Aeolian 8-Tn #2 | = | Hungarian 6- 6 7- |
| | | #130 Dorian 8-Tn. #2 | = | Hungarian 7- 7 |
| 9-Tone | ... | #139 Phrygian 9-Tn. | = | Hungarn. 2- 2 6- 6 7- |
| | | #144 Aeolian 9-Tone | = | Hungarn. 3 3+ 6- 6 7- |
| | | #145 Dorian 9-Tone | = | Hungarn. 3 3+ 7- 7 |
| | | #146 Armenian | = | Hungarn. 7- 9- 10- |

*C D E \flat F G A c
 D \flat E \flat E G \flat A \flat B \flat d \flat
 **D E F G A B d
 E \flat F G \flat A \flat B \flat C e \flat
 E F \sharp G A B C \sharp e
 F G A \flat B \flat C D f
 F \sharp G \sharp A B C \sharp D \sharp f \sharp
 *G A B \flat C D E g
 A \flat B \flat B D \flat E \flat F a \flat
 *A B C D E F \sharp a
 B \flat C D \flat E \flat F G b \flat
 B C \sharp D E F \sharp G \sharp b

Ethnic Uses:

Arabia
 Hungary

*Uses only white piano keys except for one note

**Uses only white piano keys

#95 Major 3omit 7-

APPALACHIAN

6-Tones



Intervals: 1-1½-1 - 1-½-1

Formula: (11) - m

Modal Series Scale Point Tone: MS 6-III:5

Backward: #92 Greek

Backward MS:SPT: MS 6-III:2

Alternate Symbols:

#1 MAJOR 3omit 7-

#50 Dorian 3omit

#62 Mixolydian 3omit

*C D F G A Bb c
 Db Eb F# G# A# B db
 **D E G A B C d
 Eb F Ab Bb C Db eb
 E F# A B C# D e
 F G Bb C D Eb f
 F# G# B C# D# E f#
 **G A C D E F g
 Ab Bb Db Eb F Gb ab
 *A B D E F# G a
 Bb C Eb F G Ab bb
 B C# E F# G# A b

Alternate Names:

Anglo-American

APPALACHIAN

Ethnic Uses:

Appalachian Mts., Southern (USA)

Arabic

Indian (Hindu)

Scotland

Magyars

Source:

Collinson, page 10

Altered:

5-Tone	...	#192 Pentatonic #1	=	Appalachian 3omit
7-Tone	...	#50 Dorian	=	Appalachian 3-
		#62 Mixolydian	=	Appalachian 3
8-Tone	...	#123 Dorian 8-Tn. #1	=	Appalachian 3- 3
		#128 Aeolian 8-Tn #2	=	Appalachian 3- 6- 6
		#130 Dorian 8-Tn. #2	=	Appalachian 3- 7 7+
		#136 Mixolydian 8-Tn.	=	Appalachian 3 7 7+
9-Tone	...	#139 Phrygian 9-Tn.	=	Appal. 2- 2 3- 6- 6
		#144 Aeolian 9-Tone	=	Appal. 3- 3 6- 6
		#145 Dorian 9-Tone	=	Appal. 3- 3 7 7+
		#146 Armenian	=	Appal. 3- 9- 10-

*Uses only white keys on
 piano except one note

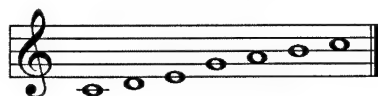
**Uses only white keys on piano

NOTE: The order of "Ethnic Uses" & "Source" is in a different than usual place on this page.

#96 Major 4omit

SCOTCH

6-Tones



Intervals: 1-1-1½ - 1-1-½

Formula: (9) - M

Modal Series Scale Point Tone: MS 6-III:4

Backward: #72 Phrygian 6-Tone

Backward MS:SPT: MS 6-III:3

Alternate Symbols:

#1 MAJOR 4omit

#51 Lydian 4omit

Altered:

5-Tone	...	#194 India	=	Scotch 6omit
		#197 Pentatonic #3	=	Scotch 7omit
7-Tone	...	#1 Major	=	Scotch 4
		#51 Lydian	=	Scotch 4+
8-Tone	...	#104 Hindu	=	Scotch 2- 2 4
		#107 Hindu	=	Scotch 2- 2 4+
		#131 Ryo 8-Tone	=	Scotch 4 4+
		#132 Hindu	=	Scotch 4+ 6- 6
		#136 Mixolydian 8-Tn	=	Scotch 4 7- 7
9-Tone	...	#140 Hindu	=	Scotch 2- 2 4 4+
		#141 Hindu	=	Scotch 2- 2 4+ 6- 6
		#143 Bartok's 9-Tone	=	Scotch 3- 3 4 5- 5
		#145 Dorian 9-Tone	=	Scotch 3- 3 4 7- 7
		#147 Ryo 9-Tone	=	Scotch 4 4+ 7- 7

**C D E G A B c
 Db Eb F Ab Bb C db
 D E F# A B C# d
 Eb F G Bb C D eb
 E F# G# B C# D# e
 **F G A C D E f
 Gb Ab Bb Db Eb F gb
 *G A B D E F# g
 Ab Bb C Eb F G ab
 A B C# E F# G# a
 *Bb C D F G A bb
 B C# D# F# G# A# b

Ethnic Uses:

African-American Slaves
 Scotland

Used by:

Debussy

Source:

Collinson, page 107

*Uses only white keys on piano except for one note

**Uses only white keys on piano

#97 Major 4+ 5+ 6+ 7omit

WHOLE TONE

6-Tones



Intervals: 1-1-1 - 1-1-1

Formula: W - W

Modal Series Scl Pnt Tn: MS 6-XIV:1,2,3,4,5,6

Backward: #97 Whole Tone

Backward MS:SPT: MS 6-XIV:1, 2, 3, 4, 5, 6

Alternate Symbols:

- #1 MAJOR 4+ 5+ 6+ 7omit
- #1 Major 4+ 5+ 6omit 7-
- #1 Major 4+ 5omit 6- 7-
- #1 Major 4omit 5- 6- 7-
- #1 Major 5omit 4+ 6- 7-
- #1 Major 6omit 4+ 5+ 7-
- #1 Major 7omit 4+ 5+ 6+
- #53 Leading Whole-Tone 7omit
- #54 Lydian-minor 5omit
- #57 Locrian-Major 4omit

Alternate Names:

Anhemitonic Scale
 Auxiliary-Augmented
 Tonal Scale
 WHOLE TONE

Altered:

- | | | | | |
|--------|-----|-----|------------------|-----------------|
| 7-Tone | ... | #53 | Leading Whl Tn = | Whole Tone 7 |
| | | #54 | Lydian-minor = | Whole Tone 5- 5 |
| | | #57 | Locrian-Major = | Whole Tone 4 4+ |

(cont'd)

#97 Major 4+ 5+ 6+ 7omit (cont'd) WHOLE TONE (cont'd) 6-Tones

Ethnic Uses: ---**Used by:**

Bartok
 Debussy
 Glinka
 Liszt
 Mozart
 Puccini
 Ravel

Source:

Colin, page 311

C D E F# G# A# c
 Db Eb F G A B db
 D E F# G# A# C d
 Eb F G A B Db eb
 E F# G# A# C D e
 F G A B Db Eb f
 Gb Ab Bb C D E gb
 G A B C# D# F g
 Ab Bb C D E F# ab
 A B C# D# F G a
 Bb C D E Gb Ab bb
 B C# D# F G A b

#98 Major 4+ 5omit 7-

PROMETHEUS

6-Tones



Intervals: 1-1-1 - $1\frac{1}{2}$ - $\frac{1}{2}$ -1

Formula: W - (14)

Modal Series Scale Point Tone: MS 6-X:1

Backward: --- [Major 3- 4+ 5omit 6- 7-; (8)-W]**

Backward MS:SPT: MS 6-XI:5

Alternate Symbols:

#1 MAJOR 4+ 5omit 7-

#1 Major 4omit 5- 7-

#1 Major 5omit 4+ 7-

#55 Overtone 5omit

#58 Zenkla 4omit

Alternate Names:

PROMETHEUS

Scriabin's "Prometheus"

Ethnic Uses: ---

Used by:

Scriabin

Source:

Slonimsky, page 14

C D E F# A Bb c
 Db Eb F G A# B db
 D E F# G# B C d
 Eb F G A C Db eb
 E F# G# A# C# D e
 *F G A B D Eb f
 F# G# A# C D# E f#
 *G A B Db E F g
 Ab Bb C D F Gb ab
 A B C# D# F# G a
 Bb C D E G Ab bb
 B C# D# F G# A b

Altered:

5-Tone	...	#193 Jazz Pent.	=	Prometheus 6omit
7-Tone	...	#55 Overtone	=	Prometheus 5
		#58 Zenkla	=	Prometheus 4- 4
8-Tone	...	#133 Hindu	=	Prometheus 4- 4 5
9-Tone	...	#147 Ryo 9-Tone	=	Prometheus 4- 4 7 7+

*Uses only white keys on piano except one note

**This is one of my "missing" scales, see page 317

NOTE: The order of "Ethnic Uses" & "Source" is in a different than usual place on this page.

#99 Major 4+ 7omit

LYDIAN 6-TONE (Appalachian)

6-Tones



Intervals: 1-1-1 - $\frac{1}{2}$ -1-1 $\frac{1}{2}$

Formula: W - (4)

Modal Series Scale Point Tone: MS 6-I:5

Backward: --- [Major 2omit 3- 5- 6- 7-; (15)-W]

Backward MS:SPT: MS 6-II:2

Alternate Symbols:

- #1 MAJOR 4+ 7omit
- #1 Major 7omit 4+
- #51 Lydian 7omit
- #55 Overtone 7omit

Alternate Names:

Anglo-American
Appalachian
Blues Scale
LYDIAN 6-TONE

Altered:

5-Tone	...	#197 Pentatonic #3	=	Lydian 6-Tn. 4omit
7-Tone	...	#51 Lydian	=	Lydian 6-Tn. 7
		#55 Overtone	=	Lydian 6-Tn. 7-
8-Tone	...	#107 Hindu	=	Lydian 6-Tn. 2- 2 7
		#121 Jobim's	=	Lydian 6-Tn. 3- 3 7-
		#131 Ryo 8-Tone	=	Lydian 6-Tn. 4- 4 7
		#132 Hindu	=	Lydian 6-Tn. 6- 6 7
		#133 Hindu	=	Lydian 6-Tn. 4- 4 7-
9-Tone	...	#140 Hindu	=	Lyd 6-T. 2- 2 4- 4 7
		#141 Hindu	=	Lyd 6-T. 2- 2 6- 6 7
		#147 Ryo 9-Tone	=	Lyd 6-T. 4- 4 7- 7

(cont'd)

#99 Major 4+ 7omit (cont'd)

LYDIAN 6-TONE (Appalachian) (cont'd)

6-Tones

Ethnic Uses:

Appalachian Mts., Southern (USA)

India (Hindu)

Scotland

Source:

Collinson, page 10

*C	D	E	F#	G	A	c
D \flat	E \flat	F	G	A \flat	B \flat	d \flat
D	E	F#	G#	A	B	d
E \flat	F	G	A	B \flat	C	e \flat
E	F#	G#	A#	B	C#	e
**F	G	A	B	C	D	f
G \flat	A \flat	B \flat	C	D \flat	E \flat	g \flat
*G	A	B	C#	D	E	g
A \flat	B \flat	C	D	E \flat	F	a \flat
A	B	C#	D#	E	F#	a
*B \flat	C	D	E	F	G	b \flat
B	D \flat	E \flat	F	G \flat	A \flat	b

*Uses only white keys on piano except for one note

**Uses only white keys on piano

#100 Major 4omit 7-

SCOTCH

6-Tones



Intervals: 1-1-1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: (9) - m

Modal Series Scale Point Tone: MS 6-II:6

Backward: #90 Aeolian 6-Tone

Backward MS:SPT: MS 6-I:1

Alternate Symbols:

- #1 MAJOR 4omit 7-
- #55 Overtone 4omit
- #62 Mixolydian 4omit

Altered:

5-Tone	...	#196 African	=	Scotch 6omit
		#197 Pentatonic #3	=	Scotch 7omit
7-Tone	...	#55 Overtone	=	Scotch 4+
		#62 Mixolydian	=	Scotch 4
8-Tone	...	#133 Hindu	=	Scotch 4 4+
		#136 Mixolydian 8-Tn	=	Scotch 7 7+
9-Tone	...	#147 Ryo 9-Tone	=	Scotch 4 4+ 7 7+

Ethnic Uses:

Scotland

Source:

Groves Dictionary of Music, Vol. III, page 349

C D E G A B \flat c
 D \flat E \flat F A \flat B \flat B d \flat
 *D E F \sharp A B C d
 E \flat F G B \flat C D \flat e \flat
 E F \sharp G \sharp B C \sharp D e
 *F G A C D E \flat f
 F \sharp G \sharp A \sharp C \sharp D \sharp E f \sharp
 **G A B D E F g
 A \flat B \flat C E \flat F G \flat a \flat
 A B C \sharp E F \sharp G a
 B \flat C D F G A \flat b \flat
 B C \sharp D \sharp F \sharp G \sharp A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano

#101 Major 4omit [7-/7]

APPALACHIAN

6-Tones



Intervals: $1-1-1\frac{1}{2}$ - $[1-1-\frac{1}{2}/1-\frac{1}{2}-1]$

Formula: (9) - [M/m]

Combination of:

#96 Scotch (Major 4omit) &

#100 Scotch (Major 4omit 7-)

Modal Series Scale Point Tone (MS:SPT):

#96 = MS 6-III:4

#100 = MS 6-II:6

Backward:

#96 = #72 Phrygian 6-Tone

#100 = #90 Aeolian 6-Tone

Backward MS:SPT:

#96 = #72 = MS 6-III:3

#100 = #90 = MS 6-I:1

Alternate Names:

Anglo=American

APPALACHIAN

Ethnic Uses:

Appalachian Mts., Southern (USA)

#102 Major 6omit 7-

MIXOLYDIAN 6-TONE (Appalachian)

6-Tones



Intervals: 1-1- $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ -1

Formula: M - (11)

Modal Series Scale Point Tone: MS 6-I:6

Backward: --- [Major 3omit 6- 7-; (11)-mN]

Backward MS:SPT: MS 6-II:1

Alternate Symbols:

- #1 MAJOR 6omit 7-
- #1 Major 6+ 7omit
- #1 Major 7omit 6+
- #61 Hindustan 6omit
- #62 Mixolydian 6omit

Alternate Names:

Anglo-American
Appalachian
MIXOLYDIAN 6-TONE

Altered:

5-Tone	...	#181	Semi. Pent. #3	=	Mixolydian 6-Tn. 2omit
		#191	Pentatonic #4	=	Mixolydian 6-Tn. 3omit
		#196	African	=	Mixolydian 6-Tn. 4omit
7-Tone	...	#61	Hindustan	=	Mixolydian 6-Tn. 6-
		#62	Mixolydian	=	Mixolydian 6-Tn. 6
8-Tone	...	#122	Aeolian 8-Tn #1	=	Mixo. 6-Tn. 3- 3 6-
		#123	Dorian 8-Tn. #1	=	Mixo. 6-Tn. 3- 3 6
		#133	Hindu	=	Mixo. 6-Tn. 5- 5 6
		#136	Mixolydian 8-Tn	=	Mixo. 6-Tn. 6 7 7+
9-Tone	...	#144	Aeolian 9-Tone	=	Mixo. 6-Tn. 3- 3 6- 6
		#145	Dorian 9-Tone	=	Mixo. 6-Tn. 3- 3 7 7+
		#147	Ryo 9-Tone	=	Mixo. 6-Tn. 4 4+ 7 7+
		#149	Adonai Malakh	=	Mixo 6-T low 6 7+, 6
10-Tone	...	#152	Russian liturg.	=	Mixo 6-T 6 9 10- 11

(cont'd)

#102 Major 6omit 7- (cont'd)**MIXOLYDIAN 6-TONE (cont'd)**

6-Tones

Ethnic Uses:

Appalachian Mts., Southern (USA)

Black Africa

Scotland

Source:

Collinson, page 10

*C D E F G B \flat c
 D \flat E \flat F G \flat A \flat B d \flat
 *D E F \sharp G A C d
 E \flat F G A \flat B \flat D \flat e \flat
 E F \sharp G \sharp A B D e
 F G A B \flat C E \flat f
 F \sharp G \sharp A \sharp B C \sharp E f \sharp
 **G A B C D F g
 A \flat B \flat C D \flat E \flat G \flat a \flat
 *A B C \sharp D E G a
 B \flat C D E \flat F A \flat b \flat
 B C \sharp D \sharp E F \sharp A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano

#103 Major 7omit

GUIDO'S SCALE

6-Tones



Intervals: 1-1- $\frac{1}{2}$ - 1-1- $1\frac{1}{2}$

Formula: M - (9)

Modal Series Scale Point Tone: MS 6-III:1

Backward: #75 Irish

Backward MS:SPT: MS. 6-III:6

Alternate Symbols:

#1 MAJOR 7omit

#62 Mixolydian 7omit

Alternate Names:

Gamut

Great Scale (Medieval)

Guido's Hexachord

GUIDO'S SCALE

Hexachord

Medieval "Great Scale"

Altered:

5-Tone	...	#182 Bulgarian	=	Guido's 2omit
		#192 Pentatonic #1	=	Guido's 3omit
		#197 Pentatonic #3	=	Guido's 4omit
		#198 African	=	Guido's 5omit
7-Tone	...	#1 Major	=	Guido's 7
		#62 Mixolydian	=	Guido's 7-
8-Tone	...	#104 Hindu	=	Guido's 2- 2 7
		#123 Dorian 8-Tn, #1	=	Guido's 3- 3 7-
		#131 Ryo 8-Tone	=	Guido's 4 4+ 7
		#131 Ryo 8-Tone	=	Guido's 5- 5 7
		#133 Hindu	=	Guido's 4 4+ 7-
		#133 Hindu	=	Guido's 5- 5 7-
		#136 Mixolydian 8-Tn	=	Guido's 7- 7

(cont'd)

#103 Major 7omit (cont'd)**GUIDO'S SCALE (cont'd)**

6-Tones

Altered (cont'd):

9-Tone	...	#140	Hindu	=	Guido 2- 2 4 4+ 7
		#140	Hindu	=	Guido 2- 2 5- 5 7
		#143	Bartok's 9-Tn.	=	Guido 3- 3 5- 5 7
		#145	Dorian 9-Tone	=	Guido 3- 3 7- 7
		#147	Ryo 9-Tone	=	Guido 4 4+ 7- 7
		#147	Ryo 9-Tone	=	Guido 5- 5 7- 7
		#149	Adonai Malakh	=	Guido low 6 7, high 7-
10-Tone	...	#152	Russian Liturg.	=	Guido 7- 9 10- 11

Ethnic Uses:

African-American Slaves

Arabia

Australian Aborigines

Finland

India (Hindu)

Japan

Russian Church

Scotland

Source:

Szabolcsi, page 104

**C D E F G A c
 D \flat E \flat F G \flat A \flat B \flat d \flat
 *D E F \sharp G A B d
 E \flat F G A \flat B \flat C e \flat
 E F \sharp G \sharp A B C \sharp e
 *F G A B \flat C D f
 F \sharp G \sharp A \sharp B C \sharp D \sharp f \sharp
 **G A B C D E g
 A \flat B \flat C D \flat E \flat F a \flat
 A B C \sharp D E F \sharp a
 B \flat C D E \flat F G b \flat
 B C \sharp D \sharp E F \sharp G \sharp b

*Uses only white keys on piano except for one note

**Uses only white keys on piano

End of 6-Tone Scales
Continue for 8-Tone Scales

THE GRAND FINALE: Part 3

8-TONE SCALES

This third part of The Grand Finale contains the following 8-Tone Scales (33 Scales):

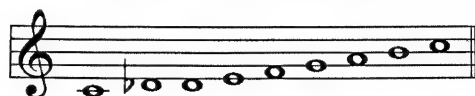
#104	Hindu	#121	Jobim's
#105	Locrian 8-Tone #1	#122	Aeolian 8-Tone #1
#106	Phrygian 8-Tone #1	#123	Dorian 8-Tone #1
#107	Hindu	#124	Conway's 8-Tone
#108	Portuguese	#125	Diminished #1
#109	Diminished #2	#126	Composite #2
#110	Espla's Scale	#127	Arabic
#111	Spanish 8-Tone	#128	Aeolian 8-Tone #2
#112	Latin American	#129	Isfahan
#113	Composite #1	#130	Dorian 8-Tone #2
#114	Locrian 8-Tone #2	#131	Ryo 8-Tone
#115	Zirafkand	#132	Hindu
#116	'Iraq	#133	Hindu
#117	Phrygian 8-Tone	#134	Bop Scale
#118	Buzurg	#135	Magon Abot
#119	Scotch Bagpipe Tuning	#136	Mixolydian 8-Tone
#120	Irak		

NOTE: Occasionally the order in which "Ethnic Uses" and "Source" is placed within a particular scale's information will differ from "the normal". This is for the reason of making that scale more "readable" by putting the entire scale with its information on only one page (or two opposing pages) rather than two non-opposing pages. However, this isn't always possible to do.

#104 Major 2- 2

HINDU

8-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1- 1-1- $\frac{1}{2}$

Formula: (2) $-\frac{1}{2}$ -1- M

Modal Series Scale Point Tone: MS 8-III:4

Backward: -- [Major 2- 3- 6- 7- 7; mN $-1-\frac{1}{2}$ - (7)]

Backward MS:SPT: MS 8-IV:5

*C D \flat D E F G A B c
 D \flat D E \flat F G \flat A \flat B \flat C d \flat
 D D \sharp E F \sharp G A B C \sharp d
 E \flat E F G A \flat B \flat C D e \flat
 E F G \flat A \flat A B C \sharp D \sharp e
 F G \flat G A B \flat C D E f
 G \flat G A \flat B \flat B D \flat E \flat F g \flat
 G A \flat A B C D E F \sharp g
 A \flat A B \flat C D \flat E \flat F G a \flat
 A B \flat B C \sharp D E F \sharp G \sharp a
 B \flat B C D E \flat F G A b \flat
 B C D \flat E \flat E F \sharp G \sharp A \sharp b

Alternate Symbols:

#1 Major 1 1+
 #1 MAJOR 2- 2
 #2 Ananda 2 2+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

Altered (om = omit):

5-Tone	...	#178	Hirajoshi #3	=	Hindu 2-om 2om 5om
		#180	Pelog #5	=	Hindu 2-om 2om 6om
		#182	Bulgarian	=	Hindu 2-om 2om 7om
		#189	Semi. Pent. #5	=	Hindu 2-om 2 3om 6om
		#192	Pentatonic #1	=	Hindu 2-om 2 3om 7om
		#197	Pentatonic #3	=	Hindu 2-om 2 4om 7om
6-Tone	...	#198	African	=	Hindu 2-om 2 5om 7om
		#86	Ionian 6-Tone	=	Hindu 2-om 2 3om
		#96	Scotch	=	Hindu 2-om 2 4om
7-Tone	...	#103	Guido's	=	Hindu 2-om 2 7om
		#1	Major	=	Hindu 2-om 2
9-Tone	...	#2	Ananda	=	Hindu 2- 2omit
		#140	Hindu	=	Hindu 4 4+

*Uses only white keys on piano except for one note

NOTE: The order in which "Ethnic Uses" and "Sources" is listed is changed in order to get this scale all on one page, which is easier to see than on two non-opposing pages.

#105 Major 2- 2 3- 5- 6- 7-

LOCRIAN 8-TONE #1 (Hindu)

8-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1-1-1

Formula: (1) -1- $\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 8-III:3

Backward: --- [Major 4+ 7- 7; W - $\frac{1}{2}$ -1- (1)]

Backward MS:SPT: MS 8-IV:6

Actual Spelling: Major 2- 3 \flat 3- 5- 6- 7-

Alternate Symbols:

- #1 Major 1 1+ 3- 5- 6- 7-
- #1 MAJOR 2- 2 3- 5- 6- 7-
- #12 Locrian 2 2+
- #45 Half-Diminished 1 1+
- #45 Half-Diminished 2- 2

Alternate Names:

Hindu
LOCRIAN 8-TONE #1

Altered (om = omit):

- | | | | | |
|--------|-----|------|---------------|---------------------------|
| 5-Tone | ... | #153 | Semi Pent #4= | Loc 8#1: 2- 2om 4om 7om |
| | | #154 | Japanese | = Loc 8#1: 2-om 2om 4om |
| | | #156 | Pelog #4 | = Loc 8#1: 2- 2om 3om 7om |
| | | #157 | Hirajoshi #2 | = Loc 8#1: 2- 2om 3om 6om |
| | | #158 | Pentatnc. #5 | = Loc 8#1: 2-om 2om 5om |
| | | #159 | Kumoi #5 | = Loc 8#1: 2-om 2om 6om |
| | | #160 | Javanese | = Loc 8#1: 2- 2om 5om 7om |
| | | #188 | Jap. Pent. #2 | = Loc 8#1: 2-om 2 3om 6om |
| 6-Tone | ... | #68 | Locrian 6-Tn | = Loc 8-Tn #1: 2- 2om 4om |
| | | #71 | Abuselik | = Loc 8-Tn #1: 2- 2om 3om |
| | | #72 | Phrygn. 6-Tn | = Loc 8-Tn #1: 2- 2om 5om |
| | | #90 | Aeolian 6-Tn | = Loc 8-Tn #1: 2-om 2 5om |

(cont'd)

#105 Major 2- 2 3- 5- 6- 7- (cont'd) **LOCRIAN 8-TONE #1** (cont'd) 8-Tones

Altered (cont'd):

7-Tone	...	#12	Locrian	=	Loc 8-Tn #1: 2- 2omit
		#45	Half-Dimin.	=	Loc 8-Tn #1: 2-om 2
9-Tone	...	#138	Locrian 9-Tn	=	Loc 8-Tn #1: 5 5+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

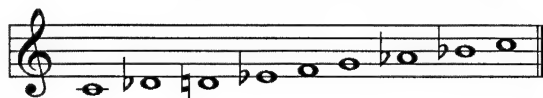
C	D \flat	D	E \flat	F	G \flat	A \flat	B \flat	c
D \flat	D	E \flat	E	F \sharp	G	A	B	d \flat
D	E \flat	E	F	G	A \flat	B \flat	C	d
E \flat	E	F	G \flat	A \flat	A	B	D \flat	e \flat
E	F	G \flat	G	A	B \flat	C	D	e
F	G \flat	G	A \flat	B \flat	B	D \flat	E \flat	f
F \sharp	G	A \flat	A	B	C	D	E	f \sharp
G	A \flat	A	B \flat	C	D \flat	E \flat	F	g
A \flat	A	B \flat	B	C \sharp	D	E	G \flat	a \flat
A	B \flat	B	C	D	E \flat	F	G	a
B \flat	B	C	D \flat	E \flat	E	G \flat	A \flat	b \flat
*B	C	C \sharp	D	E	F	G	A	b

*Uses only white piano keys except for one note

#106 Major 2- 2 3- 6- 7-

PHRYGIAN 8-TONE #1 (Hindu)

8-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1

Formula: (1) -1-1- mN

Modal Series Scale Point Tone: MS 8-I:3

Backward: #136 Mixolydian 8-Tone

Backward MS:SPT: MS 8-I:6

Alternate Symbols:

- #1 Major 1 1+ 3- 6- 7-
- #1 MAJOR 2- 2 3- 6- 7-
- #15 Phrygian 2 2+
- #49 Natural minor 2- 2

Alternate Names:

Hindu
PHRYGIAN 8-TONE #1

Altered (om = omit):

- | | | | | | |
|--------|-----|------|---------------|---|-------------------------|
| 5-Tone | ... | #155 | Pelog #1 | = | Phg 8#1: 2- 2om 4om 7om |
| | | #158 | Pentatnc. #5 | = | Phg 8#1: 2-om 2om 5om |
| | | #160 | Javanese | = | Phg 8#1: 2- 2om 5om 7om |
| | | #162 | Hirajoshi #4 | = | Phg 8#1: 2- 2om 3om 7om |
| | | #163 | Kumoi #2 | = | Phg 8#1: 2- 2om 3om 6om |
| | | #164 | Pentatnc. #2 | = | Phg 8#1: 2-om 2om 6om |
| | | #184 | Hirajoshi #1 | = | Phg 8#1: 2-om 2 4om 7om |
| | | #185 | African | = | Phg 8#1: 2-om 2 4om 6om |
| | | #190 | Kumoi #4 | = | Phg 8#1: 2-om 2 3om 7om |
| | | #191 | Pentatnc. #4 | = | Phg 8#1: 2-om 2 3om 6om |
| 6-Tone | ... | #72 | Phrygian 6-T. | = | Phryg 8-#1: 2- 2om 5om |
| | | #73 | In Scale | = | Phryg 8-#1: 2- 2om 3om |
| | | #75 | Irish | = | Phryg 8-#1: 2-om 2om |
| | | #90 | Aeolian 6-Tn | = | Phryg 8-#1: 2-om 2 5om |
| | | #92 | Greek | = | Phryg 8-#1: 2-om 2 6om |
| | | #93 | Glinka's | = | Phryg 8-#1: 2-om 2 7om |

(cont'd)

#106 Major 2- 2 3- 6- 7- (cont'd) PHRYGIAN 8-TONE #1 (cont'd)

8-Tones

Altered (cont'd):

7-tone ... #15 Phrygian = Phryg 8-#1: 2- 2omit
 #49 Natural minor = Phryg 8-#1: 2-om 2
 9-Tone ... #138 Locrian 9-Tn. = Phryg 8-#1: 5- 5
 #139 Phryg. 9-Tn. = Phryg 8-#1: 6 6+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

C	D \flat	D	E \flat	F	G	A \flat	B \flat	c
D \flat	D	E \flat	E	F \sharp	G \sharp	A	B	d \flat
D	E \flat	E	F	G	A	B \flat	C	d
E \flat	E	F	G \flat	A \flat	B \flat	B	D \flat	e \flat
*E	F	F \sharp	G	A	B	C	D	e
F	G \flat	G	A \flat	B \flat	C	D \flat	E \flat	f
F \sharp	G	A \flat	A	B	C \sharp	D	E	f \sharp
G	A \flat	A	B \flat	C	D	E \flat	F	g
A \flat	A	B \flat	B	C \sharp	D \sharp	E	G \flat	a \flat
*A	B \flat	B	C	D	E	F	G	a
B \flat	B	C	D \flat	E \flat	F	G \flat	A \flat	b \flat
B	C	C \sharp	D	E	F \sharp	G	A	b

*Uses only white piano keys except for one note

#107 Major 2- 2 4+

HINDU

8-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - 1-1- $\frac{1}{2}$

Formula: (2) -1- $\frac{1}{2}$ - M

Modal Series Scale Point Tone: MS 8-I:4

Backward: #116 'Iraq

Backward MS:SPT: MS 8-I:5

Actual Spelling: Major 1 1+ 4+

Alternate Symbols:

- #1 Major 1 1+ 4+
- #1 MAJOR 2- 2 4+
- #17 Marava 2 2+
- #51 Lydian 1 1+
- #51 Lydian 2- 2

Altered (om = omit):

5-Tone	...	#167 Kumoi #3	=	Hindu 2-om 2om 5om
		#172 Vibhasa	=	Hindu 2- 2om 5om 7om
		#173 Hirajoshi #5	=	Hindu 2-om 2om 6om
		#183 Pelog #2	=	Hindu 2-om 2 3om 6om
		#187 Semi Pent #2	=	Hindu 2-om 2 3om 7om
6-Tone	...	#197 Pentatonic #3	=	Hindu 2-om 2 4om 7om
		#78 Panchana	=	Hindu 2- 2om 5om
		#96 Scotch	=	Hindu 2-om 2 4om
		#99 Lydian 6-Tn.	=	Hindu 2-om 2 7om
7-Tone	...	#17 Marava	=	Hindu 2- 2omit
		#51 Lydian	=	Hindu 2-omit 2
9-Tone	...	#140 Hindu	=	Hindu 4- 4
		#141 Hindu	=	Hindu 6- 6

(cont'd)

#107 Major 2- 2 4+ (cont'd)

HINDU (cont'd)

8-Tones

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

C	D \flat	D	E	F \sharp	G	A	B	c
D \flat	D	E \flat	F	G	A \flat	B \flat	C	d \flat
D	E \flat	E	F \sharp	G \sharp	A	B	C \sharp	d
E \flat	E	F	G	A	B \flat	C	D	e \flat
E	F	G \flat	A \flat	B \flat	B	C \sharp	D \sharp	e
*F	G \flat	G	A	B	C	D	E	f
G \flat	G	A \flat	B \flat	C	D \flat	E \flat	F	g \flat
G	A \flat	A	B	C \sharp	D	E	F \sharp	g
A \flat	A	B \flat	C	D	E \flat	F	G	a \flat
A	B \flat	B	C \sharp	D \sharp	E	F \sharp	G \sharp	a
*B \flat	B	C	D	E	F	G	A	b \flat
B	C	D \flat	E \flat	F	G \flat	A \flat	B \flat	b

*Uses only white piano keys except for one note

#108 Major 2 2+ 4+ 8+

PORTUGUESE

8-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1-1-1$

Formula: (7) $-1-\frac{1}{2}-$ W

Modal Series Scale Point Tone: ---

Backward: ---

Backward MS:SPT: ---

Alternate Symbols:

#1 MAJOR 2 2+ 4+ 8+

#1 Major 3- 3 4+ 8+

Ethnic Uses:

Portugal

NOTE: More than an octave ($6\frac{1}{2}$ whole steps)

C	D	D#	E	F#	G	A	B	c#
Db	Eb	E	F	G	Ab	Bb	C	d
D	E	F	Gb	Ab	A	B	C#	d#
Eb	F	Gb	G	A	Bb	C	D	e
E	F#	G	G#	A#	B	C#	D#	f
F	G	Ab	A	B	C	D	E	f#
F#	G#	A	Bb	C	Db	Eb	F	g
G	A	Bb	B	C#	D	E	F#	g#
Ab	Bb	B	C	D	Eb	F	G	a
A	B	C	Db	Eb	E	F#	G#	a#
Bb	C	Db	D	E	F	G	A	b
B	C#	D	Eb	F	Gb	Ab	Bb	c

#109 Major 2- 3- 3 4+ 7-

DIMINISHED #2

8-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: Dim -1- $\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 8-V:2,4,6,8

Backward: #125 Diminished #1

Backward MS:SPT: MS 8-V: 1, 3, 5, & 7

Actual Spelling: Major 1 1+ 2+ 4+ 7-

Alternate Symbols:

#1 Major 1 1+ 2+ 4+ 7-

#1 MAJOR 2- 3- 3 4+ 7-

#21 India 3- 3

#22 Hungarian-Major 1 1+

Alternate Names:

Auxiliary Diminished Blues

Bartok's Model 1:2

DIMINISHED #2

Half Step-Whole Step Diminished

Jazz Scale against Dominant 7th

Octatonic Scale of Stravinsky

Stravinsky's Octatonic Scale

Symmetrical #2

Symmetrical Diminished

Altered:

5-Tone	...	#170	Jazz Dom Pnt =	Dim #2: 3-om 3 5om 6om
		#174	Pent.-Domin. =	Dim #2: 2-om 4om 6om
		#176	Domin. Pent. =	Dim #2: 3-om 3 4om 6om
6-Tone	...	#79	Prom.-Neap. =	Dim #2: 3-om 3 5om
7-Tone	...	#21	India =	Dim #2: 3-om 3
		#22	Hungar.-Maj. =	Dim #2: 2-omit

(cont'd)

#109 Major 2- 3- 3 4+ 7- (cont')

DIMINISHED #2 (cont'd)

8-Tones

Ethnic Uses: ---

Used by:

Rimsky-Korsakov

Joe Satriani

Source:

Golden Encyclopedia of Music, page 504

C D \flat E \flat E F \sharp G A B \flat c
 D \flat D E F G A \flat B \flat B d \flat
 D E \flat F G \flat A \flat A B C d
 E \flat E F \sharp G A B \flat C D \flat e \flat
 E F G A \flat B \flat B C \sharp D e
 F G \flat A \flat A B C D E \flat f
 F \sharp G A B \flat C D \flat E \flat E f \sharp
 G A \flat B \flat B C \sharp D E F g
 A \flat A B C D E \flat F G \flat a \flat
 A B \flat C D \flat E \flat E F \sharp G a
 B \flat B C \sharp D E F G A \flat b \flat
 B C D E \flat F G \flat A \flat A b

#110 Major 2- 3- 3 5- 6- 7-

ESPLA'S SCALE

8-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1-1

Formula: Dim $-\frac{1}{2}$ - $\frac{1}{2}$ - W

Modal Series Scale Point Tone: MS 8-IV:1

Backward: #132 Hindu

Backward MS:SPT: MS 8-III:8

Alternate Symbols:

- #1 MAJOR 2- 3- 3 5- 6- 7-
- #1 Major 2- 3- 4- 4 5- 6- 7-
- #8 Super-Locrian 4 4+
- #12 Locrian 3 3+
- #27 Rahawa 3- 3

Alternate Names:

ESPLA'S SCALE
Oscar Espla's Scale
Spanish 8-Tone

Altered (om = omit):

5-Tone	...	#153	Semi Pent #4	=	Espla's 3- 3om 4om 7om
		#154	Japanese	=	Espla's 2-om 3- 3om 4om
		#156	Pelog #4	=	Espla's 3-om 3om 7om
		#157	Hirajoshi #2	=	Espla's 3-om 3om 6om
		#158	Pentatonic #5	=	Espla's 2-om 3- 3om 5om
		#159	Kumoi #5	=	Espla's 2om 3- 3om 6om
		#160	Javanese	=	Espla 2- 3- 3om 5om 7om
6-Tone	...	#170	Jazz Dom Pnt	=	Esp 2om 3-om 3 4om 6om
		#68	Locrian 6-Tn	=	Espla's 3- 3om 4om
		#71	Abuselik	=	Espla's 3-om 3om
7-Tone	...	#72	Phrygian 6-T.	=	Espla's 3- 3om 5om
		#8	Super-Locrn.	=	Espla's 4omit
		#12	Locrian	=	Espla's 3- 3omit
		#27	Rahawi	=	Espla's 3-omit 3

(cont'd)

#110 Major 2- 3- 3 5- 6- 7- (cont'd) ESPLA'S SCALE (cont'd)

8-Tones

Ethnic Uses:

Spain (general)

Used by:

Oscar Espla

Source:

Persichetti, page 44

C	D \flat	E \flat	E	F	G \flat	A \flat	B \flat	c
D \flat	D	E	F	G \flat	G	A	B	d \flat
D	E \flat	F	G \flat	G	A \flat	B \flat	C	d
E \flat	E	F \sharp	G	A \flat	A	B	D \flat	e \flat
E	F	G	A \flat	A	B \flat	C	D	e
F	G \flat	A \flat	A	B \flat	B	D \flat	E \flat	f
F \sharp	G	A	A \sharp	B	C	D	E	f \sharp
G	A \flat	B \flat	B	C	D \flat	E \flat	F	g
A \flat	A	B	C	D \flat	D	E	G \flat	a \flat
A	B \flat	C	D \flat	D	E \flat	F	G	a
B \flat	B	C \sharp	D	E \flat	E	G \flat	A \flat	b \flat
*B	C	D	E \flat	E	F	G	A	b

*Uses only white piano keys except for one note

#111 Major 2- 3- 3 6- 7-

SPANISH 8-TONE

8-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1

Formula: Dim - $\frac{1}{2}$ -1- mN

Modal Series Scale Point Tone: MS 8-II:5

Backward: #134 Bop Scale

Backward MS:SPT: Ms 8-II:3

Alternate Symbols:

- #1 MAJOR 2- 3- 3 6- 7-
- #1 Major 2- 3- 4- 4 6- 7-
- #11 Byzantine 4 4+
- #15 Phrygian 3 3+
- #31 Spanish 3- 3

Alternate Names:

SPANISH 8-TONE
Spanish Phrygian

Altered (om = omit):

5-Tone	...	#155	Pelog #1	=	Spn 8-T 3- 3om 4om 7om
		#158	Pentatonic #5	=	Spn 8-T 2om 3- 3om 6om
		#160	Javanese	=	Spn 8-T 3- 3om 5om 7om
		#162	Hirajoshi #4	=	Spn 8-T 3-om 3om 7om
		#163	Kumoi #2	=	Spn 8-T 3-om 3om 6om
		#164	Pentatonic #2	=	Spn 8-T 2om 3- 3om 6om
		#176	Dom. Pent.	=	Spn 8-T 3-om 3 4om 6om
		#181	Semi Pent #3	=	Spn 8-T 2om 3-om 3 6om
6-Tone	...	#72	Phrygian 6-T	=	Span 8-Tn 3- 3om 5om
		#73	In Scale	=	Span 8-Tn 3-om 3om
		#74	Samanta	=	Span 8-Tn 3- 3om 7om
		#75	Irish	=	Span 8-Tn 2-om 3- 3om
		#83	Bangala	=	Span 8-Tn 3-om 3 7om
		#84	Greek	=	Span 8-Tn 3-om 3 6om
7-Tone	...	#11	Byzantine	=	Spanish 8-Tone 4omit
		#15	Phrygian	=	Spanish 8-Tone 3- 3omit
		#31	Spanish	=	Spanish 8-Tone 3-omit 3

(cont'd)

#111 Major 2- 3- 3 6- 7- (cont'd)

SPANISH 8-TONE (cont'd)

8-Tones

Ethnic Uses:

Spain, general

Used by:

Ernesto Lecuona: "Malaguena"

Oscar Espla

Source:

Laszlo/Snyder, page 11

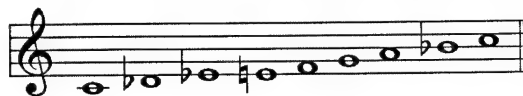
C	D \flat	E \flat	E	F	G	A \flat	B \flat	c
D \flat	D	E	F	G \flat	A \flat	A	B	d \flat
D	E \flat	F	G \flat	G	A	B \flat	C	d
E \flat	E	F \sharp	G	A \flat	B \flat	B	D \flat	e \flat
*E	F	G	A \flat	A	B	C	D	e
F	F \sharp	G \sharp	A	B \flat	C	D \flat	E \flat	f
F \sharp	G	A	B \flat	B	C \sharp	D	E	f \sharp
G	A \flat	B \flat	B	C	D	E \flat	F	g
A \flat	A	B	C	D \flat	E \flat	E	F \sharp	a \flat
A	B \flat	C	C \sharp	D	E	F	G	a
B \flat	B	C \sharp	D	E \flat	F	G \flat	A \flat	b \flat
B	C	D	D \sharp	E	F \sharp	G	A	b

*Uses only white keys on piano except for one note

#112 Major 2- 3- 3 7-

LATIN AMERICAN

8-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1

Formula: Dim $-\frac{1}{2}$ -1- m

Modal Series Scale Point Tone: MS 8-VI:6

Backward: #127 Arabic

Backward MS:SPT: MS 8-VII:1

Alternate Symbols:

#1 MAJOR 2- 3- 3 7-

#16 Javanese 3 3+

#33 Arabic 3- 3

Altered (om - omit):

5-Tone	...	#161	Semi Pent #1	=	Lat. Am. 2om 3- 3om 5om
		#163	Kumoi #2	=	Lat. Am. 3-om 3om 6om
		#164	Pentatonic #2	=	Lat. Am. 2om 3- 3om 6om
		#165	Jap. Pent. #4	=	Lat. Am. 3-om 3om 7om
		#166	Jazz min. Pnt	=	Lat. Am. 2om 3- 3om 7om
		#174	Pent. Domin.	=	Lat. Am. 2om 4om 6om
		#176	Domin. Pent.	=	Lat. Am. 3-om 3 4om 6om
		#177	Scriabin	=	Lat. Am. 3-om 3 4om 7om
		#179	Pelog #3	=	Lat. Am. 2om 3-om 3 5om
		#181	Semi Pent #3	=	Lat. Am. 2om 3-om 3 6om
6-Tone	...	#182	Bulgarian	=	Lat. Am. 2om 3-om 3 7om
		#76	African	=	Lat. Am. 3- 3om 7om
		#77	Dorian 6-Tn.	=	Lat. Am. 2om 3- 3om
		#84	Greek	=	Lat. Am. 3-om 3 6om
7-Tone	...	#85	Polish	=	Lat. Am. 2om 3-om 3
		#16	Javanese	=	Latin Amer. 3- 3omit
		#33	Arabic	=	Latin Amer. 3-omit 3

(cont'd)

#112 Major 2- 3- 3 7- (cont'd)

LATIN AMERICAN (cont'd)

8-Tones

Ethnic Uses:

Latin America, general

Source:

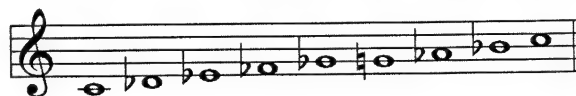
Laszlo/Snyder, page 11

C	D \flat	E \flat	E	F	G	A	B \flat	c
D \flat	D	E	F	G \flat	A \flat	B \flat	B	d \flat
D	E \flat	F	F \sharp	G	A	B	C	d
E \flat	E	F \sharp	G	A \flat	B \flat	C	D \flat	e \flat
E	F	G	G \sharp	A	B	C \sharp	D	e
F	G \flat	A \flat	A	B \flat	C	D	E \flat	f
F \sharp	G	A	A \sharp	B	C \sharp	D \sharp	E	f \sharp
G	A \flat	B \flat	B	C	D	E	F	g
A \flat	A	B	C	D \flat	E \flat	F	G \flat	a \flat
A	B \flat	C	C \sharp	D	E	F \sharp	G	a
B \flat	B	C \sharp	D	E \flat	F	G	A \flat	b \flat
B	C	D	D \sharp	E	F \sharp	G \sharp	A	b

#113 Major 2- 3- 4- 5- 5 6- 7-

COMPOSITE #1

8-Tones

Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1-1Formula: Dim -1- $\frac{1}{2}$ - mN

Modal Series Scale Point Tone: MS 8-VI:4

Backward: --- [Major 5- 6- 6; M - $\frac{1}{2}$ -1- Dim]

Backward MS:SPT: MS 8-VII:3

Alternate Symbols:

#1 Major 2- 3- 3 4+ 6- 7-

#1 MAJOR 2- 3- 4- 5- 5 6- 7-

#8 Super-Locrian 5 5+

#11 Byzantine 5- 5

Alternate Names:

COMPOSITE #1

Jazz Scale

Altered (om = omit):

5-Tone	...	#171 Jap. Pent #3	=	Comp. #1: 2om 5-om 5om
6-Tone	...	#68 Locrian 6-Tn	=	Comp. #1: 4om 5- 5om
7-Tone	...	#8 Super-Locrn.	=	Composite #1: 5- 5omit
		#11 Byzantine	=	Composite #1: 5-omit 5

C	D \flat	E \flat	E	F \sharp	G	A \flat	B \flat	c
D \flat	D	E	F	G	A \flat	A	B	d \flat
D	E \flat	F	G \flat	A \flat	A	B \flat	C	d
E \flat	E	F \sharp	G	A	B \flat	B	D \flat	e \flat
E	F	G	A \flat	B \flat	B	C	D	e
F	G \flat	A \flat	A	B	C	D \flat	E \flat	f
F \sharp	G	A	B \flat	C	C \sharp	D	E	f \sharp
G	A \flat	B \flat	B	C \sharp	D	E \flat	F	g
A \flat	A	B	C	D	E \flat	E	G \flat	a \flat
A	B \flat	C	D \flat	E \flat	E	F	G	a
B \flat	B	C \sharp	D	E	F	G \flat	A \flat	b \flat
B	C	D	E \flat	F	G \flat	G	A	b

Ethnic Uses: ---

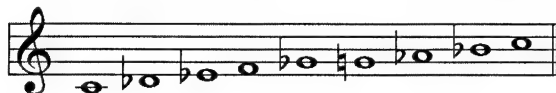
Source:

Kynaston, page 20

#114 Major 2- 3- 5- 5 6- 7-

LOCRIAN 8-TONE #2 (Hindu)

8-Tones



Intervals: $\frac{1}{2}$ -1-1 $-\frac{1}{2}-\frac{1}{2}-$ $\frac{1}{2}$ -1-1

Formula: mN $-\frac{1}{2}-\frac{1}{2}-$ mN

Modal Series Scale Point Tone: MS 8-I:8

Backward: #131 Ryo 8-Tone

Backward MS:SPT: MS 8-I:1

Alternate Symbols:

- #1 Major 2- 3- 4 4+ 6- 7-
- #1 MAJOR 2- 3- 5- 5 6- 7-
- #12 Locrian 5 5+
- #15 Phrygian 4 4+
- #15 Phrygian 5- 5

Alternate Names:

Hindu
LOCRIAN 8-TONE #2

Altered (om = omit):

5-Tone	...	#153	Semi Pent #4	=	Loc 8#2: 4om 5- 5om 7om
		#154	Japanese	=	Loc 8#2: 2om 4om 5- 5om
		#155	Pelog #1	=	Loc 8#2: 4om 5-om 5 7om
		#156	Pelog #4	=	Loc 8#2: 3om 5- 5om 7om
		#157	Hirajoshi #2	=	Loc 8#2: 3om 5- 5om 6om
		#158	Pentatonic #5	=	Loc 8#2: 2om 5-om 5om
		#159	Kumoi #5	=	Loc 8#2: 2om 5- 5om 6om
		#160	Javanese	=	Loc 8#2: 5-om 5om 7om
		#162	Hirajoshi #4	=	Loc 8#2: 3om 5-om 5 7om
		#163	Kumoi #2	=	Loc 8#2: 3om 5-om 5 6om
6-Tone	...	#164	Pentatonic #2	=	Loc 8#2: 2om 5-om 5 6om
		#68	Locrian 6-Tn	=	Loc 8#2: 4om 5- 5om
		#71	Abuselik	=	Loc 8#2: 3om 5- 5om
		#72	Phrygian 6-T	=	Loc 8#2: 5-om 5om
		#73	In Scale	=	Loc 8#2: 3om 5-om 5
		#75	Irish	=	Loc 8#2: 2om 5-om 5

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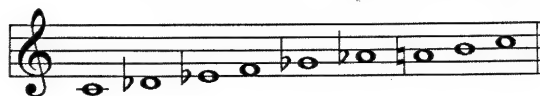
7-Tone	...	#12	Locrian	=	Locrian 8-#2: 5- 5omit
		#15	Phrygian	=	Locrian 8-#2: 5-omit 5
9-Tone	...	#138	Locrian 9-Tn	=	Locrian 8-#2: 2 2+

Arabia
India (Hindu)
Persia

Daniel, page 217

C	D \flat	E \flat	F	G \flat	G	A \flat	B \flat	c
D \flat	D	E	F \sharp	G	A \flat	A	B	d \flat
D	E \flat	F	G	A \flat	A	B \flat	C	d
E \flat	E	F \sharp	G \sharp	A	B \flat	B	C \sharp	e \flat
*E	F	G	A	B \flat	B	C	D	e
F	G \flat	A \flat	B \flat	B	C	D \flat	E \flat	f
F \sharp	G	A	B	C	C \sharp	D	E	f \sharp
G	A \flat	B \flat	C	D \flat	D	E \flat	F	g
A \flat	A	B	D \flat	D	E \flat	E	G \flat	a \flat
A	B \flat	C	D	E \flat	E	F	G	a
B \flat	B	C \sharp	D \sharp	E	F	G \flat	A \flat	b \flat
*B	C	D	E	F	F \sharp	G	A	b

*Uses only white piano keys except for one note



Formula: $mN^{-1/2-1}$ Dim

Backward MS:SPT: MS 8-VII:6

#1 MAJOR 2- 3- 5- 6- 6

ZIRAFKAND

#70 Gurjari = Zirafkand 5om 6- 6om

Persia

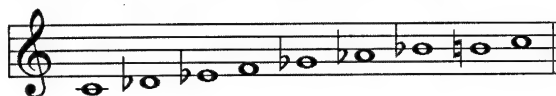
C	D \flat	E \flat	F	G \flat	A \flat	A	B	c
D \flat	D	E	F \sharp	G	A	B \flat	C	d \flat
D	E \flat	F	G	G \sharp	A \sharp	B	C \sharp	d
E \flat	E	F \sharp	G \sharp	A	B	C	D	e \flat
E	F	G	A	B \flat	C	D \flat	E \flat	e
F	G \flat	A \flat	B \flat	B	C \sharp	D	E	f
G \flat	G	A	B	C	D	E \flat	F	g \flat
G	A \flat	B \flat	C	C \sharp	D \sharp	E	F \sharp	g
A \flat	A	B	C \sharp	D	E	F	G	a \flat
A	B \flat	C	D	E \flat	F	F \sharp	G \sharp	a
B \flat	B	C \sharp	D \sharp	E	F \sharp	G	A	b \flat
B	C	D	E	F	G	A \flat	B \flat	b

Daniel, page 183

#116 Major 2- 3- 5- 6- 7- 7

'IRAQ (Arabic)

8-Tones



Intervals: $\frac{1}{2}$ -1-1 $-\frac{1}{2}$ -1- $1-\frac{1}{2}-\frac{1}{2}$

Formula: mN $-\frac{1}{2}$ -1- (7)

Modal Series Scale Point Tone: MS 8-I:5

Backward: #107 Hindu

Backward MS:SPT: MS 8-I:4

Alternate Symbols:

#1 Major 2- 3- 4 4+ 5+ 6+

#1 MAJOR 2- 3- 5- 6- 7- 7

#12 Locrian 7 7+

Alternate Names:

Arabic

'IRAQ

Ethnic Uses:

Arabia

Source:

Danielou #1, page 211

C D \flat E \flat F G \flat A \flat B \flat B c
 D \flat D E F \sharp G A B C d \flat
 D E \flat F G A \flat B \flat C C \sharp d
 E \flat E F \sharp G \sharp A B C \sharp D e \flat
 E F G A B \flat C D E \flat e
 F F \sharp G \sharp A \sharp B C \sharp D \sharp E f
 *G \flat G A B C D E F g \flat
 G A \flat B \flat C D \flat E \flat F G \flat g
 A \flat A B C \sharp D E F \sharp G a \flat
 A B \flat C D E \flat F G A \flat a
 B \flat B C \sharp D \sharp E F \sharp G \sharp A b \flat
 *B C D E F G A B \flat b

Altered (om = omit):

5-Tone	...	#153	Semi Pent #4	=	'Iraq 4om 7-om 7om
		#154	Japanese	=	'Iraq 2om 4om 7- 7om
		#156	Pelog #4	=	'Iraq 3om 7-om 7om
		#157	Hirajoshi #2	=	'Iraq 3om 6om 7- 7om
		#158	Pentatonic #5	=	'Iraq 2om 5om 7- 7om
6-Tone		#160	Javanese	=	'Iraq 5om 7-om 7om
		#162	Kumoi #5	=	'Iraq 2om 6om 7- 7om
	...	#67	Vilasakhani	=	'Iraq 4om 7-om 7
		#68	Locrian 6-Tn	=	'Iraq 4om 7- 7om
7-Tone		#70	Gurjari	=	'Iraq 5om 7-om 7
		#71	Abuselik	=	'Iraq 3om 7- 7om
	...	#12	Locrian	=	'Iraq 7- 7omit

*Uses only white piano keys except for one note

NOTE: The order of "Ethnic Uses" & "Source" is in a different than usual place on this page.

#117 Major 2- 3- 6- 6 7-

PHRYGIAN 8-TONE #2 (Hindu)

8-Tones

Intervals: $\frac{1}{2}$ -1-1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1Formula: mN -1- $\frac{1}{2}$ - (2)

Modal Series Scale Point Tone: MS 8-III:7

Backward: --- [Major 3- 3; (7) - $\frac{1}{2}$ -1- M]

Backward MS:SPT: MS 8-IV:2

Actual "Spelling": Major 2- 3- 6- 7 \flat 7-**Alternate Symbols:**

- #1 MAJOR 2- 3- 6- 6 7-
- #1 Major 2- 3- 6- 7 \flat 7-
- #1 Major 2- 3- 5 5+ 7-
- #15 Phrygian 6 6+
- #16 Javanese 6- 6

Alternate Names:

Hindu

PHRYGIAN 8-TONE #2

Altered (om = omit):

5-Tone	...	#155	Pelog #1	=	Phg 8#2: 4om 6- 6om 7om
		#158	Pentatonic #5	=	Phg 8#2: 2om 5om 6- 6om
		#160	Javanese	=	Phg 8#2: 5om 6- 6om 7om
		#161	Semi Pent #1	=	Phg 8#2: 2om 5om 6-om 6
		#162	Hirajoshi #4	=	Phg 8#2: 3om 6- 6om 7om
		#163	Kumoi #2	=	Phg 8#2: 3om 6-om 6om
		#164	Pentatonic #2	=	Phg 8#2: 2om 6-om 6om
		#165	Jap. Pent #4	=	Phg 8#2: 3om 6-om 6 7om
		#166	Jazz min Pent	=	Phg 8#2: 2om 6-om 6 7om

(cont'd)

#117 Major 2- 3- 6- 6 7- (cont'd) PHRYGIAN 8-TONE #2 (cont'd) 8-Tones

Altered (cont'd):

6-Tone	...	#72 Phrygian 6-T.	=	Phrg 8-#2: 5om 6- 6om
		#73 In Scale	=	Phrg 8-#2: 3om 6- 6om
		#74 Samanta	=	Phrg 8-#2: 6- 6om 7om
		#75 Irish	=	Phrg 8-#2: 2om 6- 6om
		#76 African	=	Phrg 8-#2: 6-om 6 7om
		#77 Dorian 6-Tn.	=	Phrg 8-#2: 2om 6-om 6
7-Tone	...	#15 Phrygian	=	Phrg 8-#2: 6- 6om
		#16 Javanese	=	Phrg 8-#2: 6-om 6
9-Tone	...	#139 Phrygn. 9-Tn	=	Phrg 8-#2: 2 2+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

C D \flat E \flat F G A \flat A B \flat c
 D \flat D E F \sharp G \sharp A B \flat B d \flat
 D E \flat F G A B \flat B C d
 E \flat E F \sharp G \sharp A \sharp B C D \flat e \flat
 *E F G A B C C \sharp D e
 F G \flat A \flat B \flat C D \flat D E \flat f
 F \sharp G A B C \sharp D D \sharp E f \sharp
 G A \flat B \flat C D E \flat E F g
 A \flat A B C \sharp D \sharp E F G \flat a \flat
 A B \flat C D E F G \flat G a
 B \flat B D \flat E \flat F G \flat G A \flat b \flat
 B C D E F \sharp G G \sharp A b

*Uses only white piano keys except for one note

#118 Major 2- 4 4+

BUZURG (Arabic)

8-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$

Formula: mH $-\frac{1}{2}$ - $\frac{1}{2}$ - M

Modal Series Scale Point Tone: MS 8-IX:1

Backward: --- [Major 2- 3- 5- 5 6-; mN $-\frac{1}{2}$ - $\frac{1}{2}$ - mH]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2- 4 4+
- #1 Major 2- 5- 5
- #17 Marava 4- 4
- #23 Chromatic Lydian 5 5+

Alternate Names:

Arabic
BUZURG

Altered (om = omit):

5-Tone	...	#172 Vibhasa	=	Buzurg 4om 4+ 5om 7om
		#178 Hirajoshi #3	=	Buzurg 2om 4 4+om 5om
6-Tone	...	#78 Panchana	=	Buzurg 4om 4+ 5om
7-Tone	...	#17 Marava	=	Buzurg 4om 4+
		#23 Chrm. Lydian	=	Buzurg 5om
9-Tone	...	#140 Hindu	=	Buzurg 2 2+

C D \flat E F F \sharp G A B c
D \flat D F G \flat G A \flat B \flat C d \flat
D E \flat F \sharp G G \sharp A B C \sharp d
E \flat E G A \flat A B \flat C D e \flat
E F G \sharp A A \sharp B C \sharp D \sharp e
F G \flat A B \flat B C D E f
F \sharp G A \sharp B C D \flat E \flat F f \sharp
G A \flat B C C \sharp D E F \sharp g
A \flat A C D \flat D E \flat F G a \flat
A B \flat C \sharp D D \sharp E F \sharp G \sharp a
B \flat B D E \flat E F G A b \flat
B C D \sharp E F F \sharp G \sharp A \sharp b

Ethnic Uses:

Arabia
Persia

Source:

Daniel, page 183

#119 Major 2- 4+ 9

SCOTCH BAGPIPE TUNING

8-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 $-\frac{1}{2}$ - $1-1-\frac{1}{2}$ -1

Formula: (5) $-\frac{1}{2}$ - M - 1

Alternate Symbols:

#17 Marava 9+

Altered:

7-Tone ... #17 Marava = Scotch Bagpipe 9omit

Ethnic Uses:

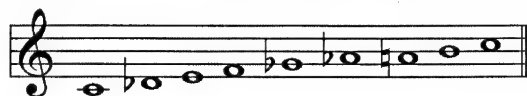
Scotch Bagpipe Tuning

NOTE: More than an octave (7 whole steps)

#120 Major 2- 5- 6- 6

Irak

8-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: mH - $\frac{1}{2}$ -1- Dim

Modal Series Scale Point Tone: MS 8-VIII:1

Backward: --- [Major 2- 3- 4- 5- 5 6-]
[Dim -1- $\frac{1}{2}$ - mH]

Backward MS:SPT: MS 8-VIII:4

Alternate Symbols:

- #1 Major 2- 4 4+ 5+
- #1 MAJOR 2- 5- 6- 6
- #23 Chromatic Lydian 6- 6
- #26 Persian 6 6+

Alternate Names:

Arabic
IRAK

Altered (om = omit):

- | | | | | |
|--------|-----|-------------------|---|---------------------|
| 5-Tone | ... | #156 Pelog #4 | = | Irak 3om 6- 6om 7om |
| | | #172 Vibhasa | = | Irak 4om 6-om 6 7om |
| | | #178 Hirajoshi #3 | = | Irak 2om 5om 6-om 6 |
| 6-Tone | ... | #78 Panchana | = | Irak 4om 6-om 6 |
| 7-Tone | ... | #23 Chrm. Lydian | = | Irak 6-omit 6 |
| | | #26 Persian | = | Irak 6- 6omit |

C D \flat E F G \flat A \flat A B c
D \flat D F G \flat G A B \flat C d \flat
D E \flat F \sharp G A \flat B \flat B C \sharp d
E \flat E G A \flat A B C D e \flat
E F G \sharp A B \flat C D \flat E \flat e
F G \flat A B \flat B C \sharp D E f
F \sharp G A \sharp B C D E \flat F f \sharp
G A \flat B C C \sharp D \sharp E F \sharp g
A \flat A C D \flat D E F G a \flat
A B \flat C \sharp D E \flat F G \flat A \flat a
B \flat B D E \flat E F \sharp G A b \flat
B C D \sharp E F G A \flat B \flat b

Ethnic Uses:

Arabia
Persia

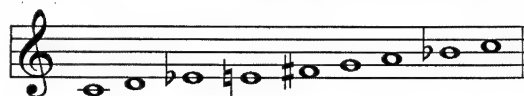
Source:

Daniel, page 183

#121 Major 3- 3 4+ 7-

JOBIM'S SCALE

8-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1$

Formula: (7) $-1-\frac{1}{2}-m$

Modal Series Scale Point Tone: MS 8-VII:4

Backward: #126 Composite #2

Backward MS:SPT: MS. 8-VI:3

Alternate Symbols:

#1 Major 2 2+ 4+ 7-

#1 MAJOR 3- 3 4+ 7-

#44 Roumanian-minor 3 3+

#55 Overtone 3- 3

Altered (om = omit):

5-Tone	...	#169	Dimin. Pent.	=	Jobim 2om 5om 6om
		#174	Pent.-Domin.	=	Jobim 2om 4om 6om
		#186	Kumoi #1	=	Jobim 3- 3om 4om 7om
		#187	Semi Pent #2	=	Jobim 3-om 3om 7om
		#197	Pentatonic #3	=	Jobim 3-om 3 4om 7om
6-Tone	...	#88	Akebono	=	Jobim 3- 3omit 4omit
		#89	Overtone 6-T.	=	Jobim 3-omit 3omit
		#99	Lydian 6-Tn	=	Jobim 3-om 3 7om
7-Tone	...	#44	Rouman.-min.	=	Jobim 3- 3omit
		#55	Overtone	=	Jobim 3-omit 3

C D E \flat E F \sharp G A B \flat c
 D \flat E \flat E F G A \flat B \flat B d \flat
 D E F F \sharp G \sharp A B C d
 E \flat F G \flat G A B \flat C D \flat e \flat
 E F \sharp G G \sharp A \sharp B C \sharp D e
 F G A \flat A B C D E \flat f
 F \sharp G \sharp A B \flat C D \flat E \flat E f \sharp
 G A A \sharp B C \sharp D E F g
 A \flat B \flat B C D E \flat F G \flat a \flat
 A B C C \sharp D \sharp E F \sharp G a
 B \flat C D \flat D E F G A \flat b \flat
 B C \sharp D E \flat F F \sharp G \sharp A b

Ethnic Uses:

Brazil

Used by:

Antonio Jobim in "Stoneflower"

Source:

Bud Conway's analysis of Jobim's "Stoneflower"

#122 Major 3- 3 6- 7-

AEOLIAN 8-TONE #1 (Hindu)

8-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-$ $-\frac{1}{2}-1-$ $\frac{1}{2}-1-1$

Formula: (7) $-\frac{1}{2}-1-$ mN

Modal Series Scale Point Tone: MS 8-III:2

Backward: --- [Major 6- 6 7-; M $-1-\frac{1}{2}-$ (2)]

Backward MS:SPT: MS 8-IV:7

Actual Spelling: Major 3- 4- 4 6- 7-

Alternate Symbols:

- #1 Major 2 2+ 6- 7-
- #1 Major 3- 4- 4 6- 7-
- #1 MAJOR 3- 3 6- 7-
- #43 Greek 4 4+
- #49 Natural minor 3 3+
- #49 Natural minor 4- 4
- #61 Hindustan 2 2+
- #61 Hindustan 3- 3

Alternate Names:

AEOLIAN 8-TONE #1
Hindu

Altered (om = omit):

- 5-Tone ... #158 Pentatonic #5 = Aeo 8#1: 2om 3- 3om 5om
 #164 Pentatonic #2 = Aeo 8#1: 2om 3- 3om 6om
 #171 Jap. Pent. #3 = Aeo 8#1: 2om 4om 5om
 #174 Pent.-Domin. = Aeo 8#1: 2om 4om 6om
 #181 Semi Pent #3 = Aeo 8#1: 2om 3-om 3 6om
 #184 Hirajoshi #1 = Aeo 8#1: 3- 3om 4om 7om
 #185 African = Aeo 8#1: 3- 3om 4om 6om
 #190 Kumoi #4 = Aeo 8#1: 3-om 3om 7om
 #191 Pentatonic #4 = Aeo 8#1: 3-om 3om 6om
 #195 Jap. Pent. #1 = Aeo 8#1: 3- 3om 4om 7om

(cont'd)

#122 Major 3- 3 6- 7- (cont'd)	AEOLIAN 8-TONE #1 (cont'd)	8-Tones
---------------------------------------	-----------------------------------	---------

Altered (cont'd):

6-Tone	...	#75 Irish	=	Aeol 8-Tn #1: 2om 3- 3om
		#90 Aeolian 6-Tn	=	Aeol 8-Tn #1: 3- 3om 5om
		#92 Greek	=	Aeol 8-Tn #1: 3- 3om 6om
		#93 Glinka's	=	Aeol 8-Tn #1: 3- 3om 7om
		#102 Mixolyd 6-Tn	=	Aeol 8-Tn #1: 3-om 3 6om
7-Tone	...	#43 Greek	=	Aeol 8-Tn #1: 4omit
		#49 Natural minor	=	Aeol 8-Tn #1: 3- 3omit
		#61 Hindustan	=	Aeol 8-Tn #1: 3-omit 3
9-Tone	...	#144 Aeolian 9-Tn	=	Aeol 8-Tn #1: 6 6+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

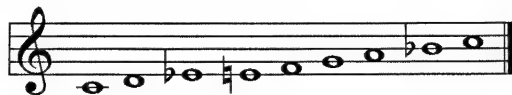
C	D	E \flat	E	F	G	A \flat	B \flat	c
D \flat	E \flat	E	F	G \flat	A \flat	A	B	d \flat
D	E	F	F \sharp	G	A	B \flat	C	d
E \flat	F	G \flat	G	A \flat	B \flat	B	D \flat	e \flat
E	F \sharp	G	G \sharp	A	B	C	D	e
F	G	A \flat	A	B \flat	C	D \flat	E \flat	f
F \sharp	G \sharp	A	B \flat	B	C \sharp	D	E	f \sharp
G	A	B \flat	B	C	D	E \flat	F	g
A \flat	B \flat	B	C	D \flat	E \flat	E	G \flat	a \flat
*A	B	C	C \sharp	D	E	F	G	a
B \flat	C	D \flat	D	E \flat	F	G \flat	A \flat	b \flat
B	C \sharp	D	D \sharp	E	F \sharp	G	A	b

*Uses white piano keys only except for one note

#123 Major 3- 3 7-

DORIAN 8-TONE #1 (Hindu)

8-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}-1-1-\frac{1}{2}-1$

Formula: (7) $-\frac{1}{2}-1-$ m

Modal Series Scale Point Tone: MS 8-I:2

Backward: #128 Aeolian 8-Tone #2

Backward MS:SPT: MS 8-I:7

Alternate Symbols:

- #1 Major 2 2+ 7-
- #1 MAJOR 3- 3 7-
- #32 Roumanian-Major 2- 2
- #50 Dorian 3 3+
- #62 Mixolydian 2 2+
- #62 Mixolydian 3- 3

Alternate Names:

- Auxiliary Blues
- DORIAN 8-TONE #1
- Hindu
- Jazz Scale against Dominant 7th chord

Altered (om = omit):

- | | | | | |
|--------|-----|------|-----------------|-------------------------|
| 5-Tone | ... | #161 | Semi Pent #1 = | Dor 8#1: 2om 3- 3om 5om |
| | | #164 | Pentatonic #2 = | Dor 8#1: 2om 3- 3om 6om |
| | | #166 | Jazz min Pent = | Dor 8#1: 2om 3- 3om 7om |
| | | #174 | Pent-Domin. = | Dor 8#1: 2om 4om 6om |
| | | #179 | Pelog #3 = | Dor 8#1: 2om 3-om 3 5om |
| | | #181 | Semi Pent #3 = | Dor 8#1: 2om 3-om 3 6om |
| | | #182 | Bulgarian = | Dor 8#1: 2om 3-om 3 7om |
| | | #185 | African = | Dor 8#1: 3- 3om 4om 6om |
| | | #186 | Kumoi #1 = | Dor 8#1: 3- 3om 4om 7om |
| | | #191 | Pentatonic #4 = | Dor 8#1: 3-om 3om 6om |

(cont'd)

#123 Major 3- 3 7- (cont'd)

DORIAN 8-TONE #1 (cont'd)

8-Tones

Altered (cont'd):

5-Tone (cont'd)	...	#192 Pentatonic #1 =	Dor 8#1: 3-om 3om 7om
		#197 Pentatonic #3 =	Dor 8#1: 3-om 3 4om 7om
		#198 African =	Dor 8#1: 3-om 3 5om 7om
6-Tone	...	#77 Dorian 6-Tone =	Dor 8#1: 2om 3- 3om
		#85 Polish =	Dor 8#1: 2om 3-om 3
		#88 Akebono =	Dor 8#1: 3- 3om 4om
		#92 Greek =	Dor 8#1: 3- 3om 6om
		#94 Hungarian =	Dor 8#1: 3- 3om 7om
		#95 Appalachian =	Dor 8#1: 3-om 3om
		#100 Scotch =	Dor 8#1: 3-om 3 4om
		#102 Mixolyd. 6-Tn =	Dor 8#1: 3-om 3 6om
7-Tone	...	#103 Guido's =	Dor 8#1: 3-om 3 7om
		#32 Rouman.-Maj. =	Dor 8-Tn #1: 2omit
		#50 Dorian =	Dor 8-Tn #1: 3- 3omit
		#62 Mixolydian =	Dor 8-Tn #1: 3-omit 3
9-Tone	...	#144 Aeolian 9-Tn =	Dor 8-Tn #1: 6- 6
		#145 Dorian 9-Tone =	Dor 8-Tn #1: 7 7+

Ethnic Uses:

India (Hindu)

Source:

Kynaston, page 20

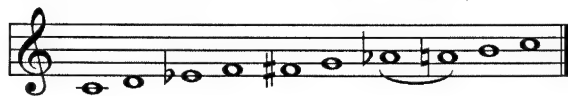
C D E^b E F G A B^b c
 D^b E^b E F G^b A^b B^b B d^b
 *D E F F[#] G A B C d
 E^b F G^b G A^b B^b C D^b e^b
 E F[#] G G[#] A B C[#] D e
 F G A^b A B^b C D E^b f
 F[#] G[#] A A[#] B C[#] D[#] E f[#]
 *G A B^b B C D E F g
 A^b B^b B C D^b E^b F G^b a^b
 A B C C[#] D E F[#] G a
 B^b C D^b D E^b F G A^b b^b
 B C[#] D D[#] E F[#] G[#] A b

*Uses only white piano keys except for one note

#124 Major 3- 4 4+ [6-/6]

CONWAY'S 8-TONE

8-Tones



Intervals: $1-\frac{1}{2}-1$ $-\frac{1}{2}-\frac{1}{2}-$ $[1-1-\frac{1}{2}/\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}]$

Formula: m $-\frac{1}{2}-\frac{1}{2}-$ [M/mH]

Combination of:

#37 Lydian Diminished, Major 3- 4+ (+4)

#40 Hungarian-minor, Major 3- 4+ 6- (+4)

Alternate Symbols:

#1 MAJOR 3- 4 4+ [6-/6]

#1 Major 3- 5- 5 [6-/6]

#38 Conway's 7-Tone [6-/6]

Alternate Names:

Bud Conway's 8-Tone

CONWAY'S 8-TONE

Jazz Scale used against minor 7th chord

Altered (om = omit):

7-Tone ... #38 Conway's 7-T = Conway's 8-T [6-/6] omit

9-Tone ... #143 Bartok's 9-T = Conway's 8-T 3 3+ [6-/6] omit

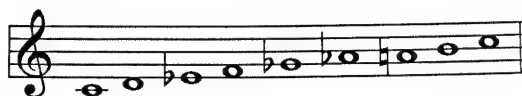
Ethnic Uses: ---**Source:**

Given to me by Bud Conway himself

#125 Major 3- 5- 6- 6

DIMINISHED #1

8-Tones



Intervals: $1-\frac{1}{2}-1$ $-\frac{1}{2}-1$ $\frac{1}{2}-1-\frac{1}{2}$

Formula: m $-\frac{1}{2}-1$ Dim

Modal Series Scale Point Tone: MS 8-V:1, 3, 5, 7

Backward: #109 Diminished #2

Backward MS:SPT: MS 8-V:2, 4, 6, 8

Actual Spelling: Major 3- 5- 6- 7 \flat 8- 8

Alternate Symbols:

#1 Major 3- 4 4+ 5+

#1 Major 3- 5- 6- 7 \flat 8- 8

#1 MAJOR 3- 5- 6- 6

Alternate Names:

Arabian

Auxiliary Diminished

DIMINISHED #1

Symmetrical #1

Whole Step-Half Step Diminished

Ethnic Uses:

Arabia

Used by:

Manuel DeFalla: "Ritual Fire Dance"

Source:

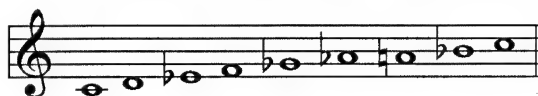
Colin, page 307

C D E \flat F G \flat A \flat A B c
 D \flat E \flat E F \sharp G A B \flat C d \flat
 D E F G A \flat B \flat B C \sharp d
 E \flat F G \flat A \flat A B C D e \flat
 E F \sharp G A B \flat C D \flat E \flat e
 F G A \flat B \flat B C \sharp D E f
 G \flat A \flat A B C D E \flat F g \flat
 G A B \flat C D \flat E \flat E F \sharp g
 A \flat B \flat B C \sharp D E F G a \flat
 A B C D E \flat F G \flat A \flat a
 B \flat C D \flat E \flat E F \sharp G A b \flat
 B C \sharp D E F G A \flat B \flat b

#126 Major 3- 5- 6- 6 7-

COMPOSITE #2

8-Tones

Intervals: 1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1Formula: m - $\frac{1}{2}$ -1- (2)

Modal Series Scale Point Tone: MS 8-VI:3

Backward: #121 Jobim's

Backward MS:SPT: MS 8-VII:4

Alternate Symbols:

- #1 Major 3- 4 4+ 5+ 7-
- #1 MAJOR 3- 5- 5 6- 6 7-
- #45 Half-Diminished 6 6+
- #46 Zangula 6- 6

Alternate Names:

COMPOSITE #2

Jazz Scale against Diminished 7th chord

Altered:

- 7-Tone ... #45 Half-Diminish. = Composite #2: 6- 6omit
 #46 Zangula = Composite #2: 6-omit 6

Ethnic Uses: ---

Source:

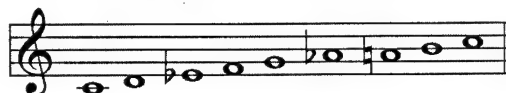
Kynaston, page 20

C	D	E \flat	F	G \flat	A \flat	A	B \flat	c
D \flat	E \flat	E	F \sharp	G	A	B \flat	B	d \flat
D	E	F	G	A \flat	B \flat	B	C	d
E \flat	F	G \flat	A \flat	A	B	C	D \flat	e \flat
E	F \sharp	G	A	B \flat	C	D \flat	D	e
F	G	A \flat	B \flat	B	C \sharp	D	E \flat	f
F \sharp	G \sharp	A	B	C	D	D \sharp	E	f \sharp
G	A	B \flat	C	D \flat	E \flat	E	F	g
A \flat	B \flat	B	C \sharp	D	E	F	G \flat	a \flat
A	B	C	D	E \flat	F	G \flat	G	a
B \flat	C	D \flat	E \flat	E	F \sharp	G	A \flat	b \flat
B	C \sharp	D	E	F	G	G \sharp	A	b

#127 Major 3- 6- 6

ARABIC

8-Tones



Intervals: $1-\frac{1}{2}-1$ $-1-\frac{1}{2}-$ $\frac{1}{2}-1-\frac{1}{2}$

Formula: m $-1-\frac{1}{2}-$ Dim

Modal Series Scale Point Tone: MS 8-VII:1

Backward: #112 Latin American

Backward MS:SPT: MS 3-VI:6

Alternate Symbols:

#1 Major 3- 5 5+

#1 MAJOR 3- 6- 6

#34 Melodic minor 6- 6

#47 Harmonic minor 6 6+

#48 Ptolemy's 7

Altered (om = omit):

5-Tone	...	#184 Hirajoshi #1	=	Arabic 4om 6- 6om 7om
		#186 Kumoi #1	=	Arabic 4om 6-om 6 7om
		#189 Semi Pent #5	=	Arabic 3om 6-om 6om
		#190 Kumoi #4	=	Arabic 3om 6- 6om 7om
		#192 Pentatonic #1	=	Arabic 3om 6-om 6 7om
6-Tone	...	#86 Ionian 6-Tone	=	Arabic 3om 6-om 6
		#91 Armenian	=	Arabic 3om 6- 6om
		#93 Glinka's	=	Arabic 6- 6om 7om
		#94 Hungarian	=	Arabic 6-om 6 7om
7-Tone	...	#34 Melodic minor	=	Arabic 6-omit 6
		#47 Harmonic min.	=	Arabic 6- 6omit
		#48 Ptolemy's	=	Arabic 7omit

C D E \flat F G A \flat A B c
D \flat E \flat E F \sharp G \sharp A B \flat C d \flat
D E F G A B \flat B C \sharp d
E \flat F G \flat A \flat B \flat B C D e \flat
E F \sharp G A B C C \sharp D \sharp e
F G A \flat B \flat C D \flat D E f
G \flat A \flat A B C \sharp D E \flat F g \flat
G A B \flat C D E \flat E F \sharp g
A \flat B \flat B C \sharp D \sharp E F G a \flat
A B C D E F F \sharp G \sharp a
B \flat C D \flat E \flat F G \flat G A b \flat
B C \sharp D E F \sharp G G \sharp A \sharp b

Ethnic Uses:

Arabic

Source:

New Oxford History of Music, Vol. I, p. 450

#128 Major 3- 6- 6 7-

AEOLIAN 8-TONE #2 (Hindu)

8-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1

Formula: m -1- $\frac{1}{2}$ - (2)

Modal Series Scale Point Tone: MS 8-I:7

Backward: #123 Dorian 8-Tone #1

Backward MS:SPT: MS 8-I:2

Alternate Symbols:

- #1 Major 3- 5 5+ 7-
- #1 MAJOR 3- 6- 6 7-
- #48 Ptolemy's 7-
- #49 Natural minor 6 6+
- #50 Dorian 5 5+
- #50 Dorian 6- 6

Alternate Names:

AEOLIAN 8-TONE #2
Hindu

Altered (om = omit):

- 5-Tone ... #158 Pentatonic #5 = Aeol 8#2: 2om 5om 6- 6om
- #161 Semi Pent #1 = Aeol 8#2: 2om 5om 6-om 6
- #164 Pentatonic #2 = Aeol 8#2: 2om 6-om 6om
- #166 Jazz min Pent = Aeol 8#2: 2om 6-om 6 7om
- #184 Hirajoshi #1 = Aeol 8#2: 4om 6- 6om 7om
- #185 African = Aeol 8#2: 4om 6-om 6om
- #186 Kumoi #1 = Aeol 8#2: 4om 6-om 6 7om
- #190 Kumoi #4 = Aeol 8#2: 3om 6- 6om 7om
- #191 Pentatonic #4 = Aeol 8#2: 3om 6-om 6om
- #192 Pentatonic #1 = Aeol 8#2: 3om 6-om 6 7om

(cont'd)

#128 Major 3- 6- 6 7- (cont'd)

AEOLIAN 8-TONE #2 (cont'd)

8-Tones

Altered (cont'd):

6-Tone	...	#75	Irish	=	Aeol 8-#2: 2om 6- 6om
		#77	Dorian 6-Tone	=	Aeol 8-#2: 2om 6-om 6
		#88	Akebono	=	Aeol 8-#2: 4om 6-om 6
		#90	Aeolian 6-Tn	=	Aeol 8-#2: 5om 6- 6om
		#92	Greek	=	Aeol 8-#2: 6-om 6om
		#93	Glinka's	=	Aeol 8-#2: 6- 6om 7om
		#94	Hungarian	=	Aeol 8-#2: 6-om 6 7om
		#95	Appalachian	=	Aeol 8-#2: 3om 6- 6om
7-Tone	...	#48	Ptolemy's	=	Aeol 8-Tn #2: 7omit
		#49	Natural minor	=	Aeol 8-Tn #2: 6- 6omit
		#50	Dorian	=	Aeol 8-Tn #2: 6-omit 6
9-Tone	...	#139	Phrygian 9-T	=	Aeol 8-Tn #2: 2- 2
		#144	Aeolian 9-Tn	=	Aeol 8-Tn #2: 3 3+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 210

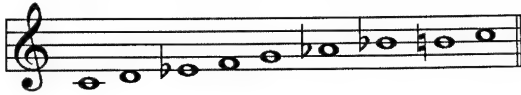
C D E \flat F G A \flat A B \flat c
 D \flat E \flat E F \sharp G \sharp A B \flat B d \flat
 *D E F G A B \flat B C d
 E \flat F G \flat A \flat B \flat B C D \flat e \flat
 E F \sharp G A B C C \sharp D e
 F G A \flat B \flat C D \flat D E \flat f
 F \sharp G \sharp A B C \sharp D D \sharp E f \sharp
 G A B \flat C D E \flat E F g
 A \flat B \flat B C \sharp D \sharp E F G \flat a \flat
 *A B C D E F F \sharp G a
 B \flat C D \flat E \flat F G \flat G A \flat b \flat
 B C \sharp D E F \sharp G G \sharp A b

*Uses only white piano keys except for one note

#129 Major 3- 6- 7- 7

ISFAHAN (Arabic)

8-Tones



Intervals: $1-\frac{1}{2}-1$ $-1-\frac{1}{2}-$ $1-\frac{1}{2}-\frac{1}{2}$

Formula: m $-1-\frac{1}{2}-$ (7)

Modal Series Scale Point Tone: MS 8-II:1

Backward: --- [Major 2- 2 7-; (2) $-\frac{1}{2}-1-$ m]

Backward MS:SPT: MS 8-II:7

Alternate Symbols:

- #1 Major 3- 5 5+ 6+
- #1 MAJOR 3- 6- 7- 7
- #47 Harmonic minor 7- 7
- #49 Natural minor 7 7+

Alternate Names:

Arabic
ISFAHAN

Altered (om = omit):

5-Tone	...	#158	Pentatonic #5 =	Isfahan 2om 5om 7- 7om
		#164	Pentatonic #2 =	Isfahan 2om 6om 7- 7om
		#184	Hirajoshi #1 =	Isfahan 4om 7-om 7om
		#185	African =	Isfahan 4om 6om 7- 7om
		#189	Semi Pent #5 =	Isfahn. 3om 6om 7-om 7
		#190	Kumoi #4 =	Isfahan 3om 7-om 7om
6-Tone	...	#191	Pentatonic #4 =	Isfahan 3om 6om 7- 7om
		#75	Irish =	Isfahan 2om 7- 7om
		#90	Aeolian 6-Tn =	Isfahan 5om 7- 7om
		#91	Armenian =	Isfahan 3om 7-om 7
		#92	Greek =	Isfahan 6om 7- 7om
7-Tone	...	#93	Glinka's =	Isfahan 7-om 7om
		#47	Harmonic min.=	Isfahan 7-omit 7
		#49	Natural minor =	Isfahan 7- 7omit

(cont'd)

#129 Major 3- 6- 7- 7 (cont'd)

ISFAHAN (cont'd)

8-Tones

Ethnic Uses:

Arabia

Source:

Harvard Dictionary of Music, page 47

C	D	E \flat	F	G	A \flat	B \flat	B	c
D \flat	E \flat	E	F \sharp	G \sharp	A	B	C	d \flat
D	E	F	G	A	B \flat	C	D \flat	d
E \flat	F	G \flat	A \flat	B \flat	B	C \sharp	D	e \flat
E	F \sharp	G	A	B	C	D	E \flat	e
F	G	A \flat	B \flat	C	D \flat	E \flat	E	f
G \flat	A \flat	A	B	C \sharp	D	E	F	g \flat
G	A	B \flat	C	D	E \flat	F	G \flat	g
A \flat	B \flat	B	C \sharp	D \sharp	E	F \sharp	G	a \flat
*A	B	C	D	E	F	G	A \flat	a
B \flat	C	D \flat	E \flat	F	G \flat	A \flat	A	b \flat
B	C \sharp	D	E	F \sharp	G	A	A \sharp	b

*Uses only white piano keys except for one note

#130 Major 3- 7- 7

DORIAN 8-TONE #2 (Hindu)

8-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$

Formula: m -1-1- (1)

Modal Series Scale Point Tone: MS 8-III:6

Backward: --- [Major 2- 2 3- 7-; (1) -1-1- m]

Backward MS:SPT: MS 8-IV:3

Actual Spelling: Major 3- 7- 8- 8

Alternate Symbols:

- #1 Major 3- 6 6+
- #1 MAJOR 3- 7- 7
- #1 Major 3- 7- 8- 8
- #34 Melodic minor 6 6+
- #34 Melodic minor 7- 7
- #50 Dorian 7 7+

Alternate Names:

DORIAN 8-TONE #2
Hindu

Altered (om = omit):

- 5-Tone ... #161 Semi Pent #1 = Dor 8#2: 2om 5om 7- 7om
 #164 Pentatonic #2 = Dor 8#2: 2om 6om 7- 7om
 #166 Jazz min Pent = Dor 8#2: 2om 7-om 7om
 #185 African = Dor 8#2: 4om 6om 7- 7om
 #186 Kumoi #1 = Dor 8#2: 4om 7-om 7om
 #189 Semi Pent #5 = Dor 8#2: 3om 6om 7-om 7
 #191 Pentatonic #4 = Dor 8#2: 3om 6om 7- 7om
 #192 Pentatonic #1 = Dor 8#2: 3om 7-om 7om

(cont'd)

#130 Major 3- 7- 7 (cont'd)

DORIAN 8-TONE #2 (cont'd)

8-Tones

Altered (cont'd):

6-Tone	...	#65	African	=	Dor 8-T #2: 2om 7-om 7
		#77	Dorian 6-Tone	=	Dor 8-T #2: 2om 7- 7om
		#86	Ionian 6-Tone	=	Dor 8-T #2: 3om 7-om 7
		#88	Akebono	=	Dor 8-T #2: 4om 7- 7om
		#92	Greek	=	Dor 8-T #2: 6om 7- 7om
		#94	Hungarian	=	Dor 8-T #2: 7-om 7om
		#95	Appalachian	=	Dor 8-T #2: 3om 7- 7om
7-Tone	...	#34	Melodic minor	=	Dorian 8-Tn #2: 7-om 7
		#50	Dorian	=	Dorian 8-Tn #2: 7- 7om
9-Tone	...	#145	Dorian 9-Tone	=	Dorian 8-Tn #2: 3 3+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

C D E^b F G A B^b B c
 D^b E^b E F[#] G[#] A[#] B C d^b
 *D E F G A B C C[#] d
 E^b F G^b A^b B^b C D^b D e^b
 E F[#] G A B C[#] D D[#] e
 F G A^b B^b C D E^b E f
 F[#] G[#] A B C[#] D[#] E F f[#]
 G A B^b C D E F G^b g
 A^b B^b B D^b E^b F G^b G a^b
 A B C D E F[#] G A^b a
 B^b C D^b E^b F G A^b A b^b
 B C[#] D E F[#] G[#] A A[#] b

*Uses only white piano keys except for one note

#131 Major 4 4+

RYO 8-TONE

8-Tones



Intervals: $1-1-\frac{1}{2}$ $-\frac{1}{2}-\frac{1}{2}-$ $1-1-\frac{1}{2}$

Formula: M $-\frac{1}{2}-\frac{1}{2}-$ M

Modal Series Scale Point Tone: MS 8-I:1

Backward: #114 Locrian 8-Tone #2

Backward MS:SPT: MS 8-I:8

Alternate Symbols:

- #1 MAJOR 4 4+
- #1 Major 5- 5
- #51 Lydian 4- 4

Alternate Names:

Ichikosucho (starting on D) (Japan)
Japanese
RYO 8-TONE

Altered (om = omit):

5-Tone	...	#167	Kumoi #3	=	Ryo 8Tn 2om 4om 4+ 5om
		#173	Hirajoshi #5	=	Ryo 8Tn 2om 4om 4+ 6om
		#178	Hirajoshi #3	=	Ryo 8Tn 2om 4 4+om 5om
		#180	Pelog #5	=	Ryo 8Tn 2om 4 4+om 6om
		#182	Bulgarian	=	Ryo 8Tn 2om 4 4+om 7om
		#183	Pelog #2	=	Ryo 8Tn 3om 4om 4+ 6om
		#187	Semi Pent #2	=	Ryo 8Tn 3om 4om 4+ 7om
		#189	Semi Pent #5	=	Ryo 8Tn 3om 4 4+om 6om
		#192	Pentatonic #1	=	Ryo 8Tn 3om 4 4+om 7om
		#194	India	=	Ryo 8Tn 4om 4+om 6om
		#197	Pentatonic #3	=	Ryo 8Tn 4om 4+om 7om
		#198	African	=	Ryo 8Tn 4 4+om 5om 7om

(cont'd)

#131 Major 4 4+ (cont'd)**RYO 8-TONE (cont'd)**

8-Tones

Altered (cont'd):

6-Tone	...	#86	Ionian 6-Tone	=	Ryo 8-Tone 3om 4 4+om
		#96	Scotch	=	Ryo 8-Tone 4om 4+om
		#99	Lydian 6-Tn	=	Ryo 8-Tone 4om 4+ 7om
		#103	Guido's	=	Ryo 8-Tone 4 4+om 7om
7-Tone	...	#1	Major	=	Ryo 8-Tone 4 4+omit
		#51	Lydian	=	Ryo 8-Tone 4omit 4+
9-Tone	...	#140	Hindu	=	Ryo 8-Tone 2- 2
		#143	Bartok's 9-Tn	=	Ryo 8-Tone 3- 3
		#147	Ryo 9-Tone	=	Ryo 8-Tone 7- 7

Ethnic Uses:

Japan

Source:

Colin, page 309

*C D E F F# G A B c
D \flat E \flat F G \flat G A \flat B \flat C d \flat
D E F# G G# A B C# d
E \flat F G A \flat A B \flat C D e \flat
E F# G# A A# B C# D# e
*F G A B \flat B C D E f
G \flat A \flat B \flat B C D \flat E \flat F g \flat
G A B C C# D E F# g
A \flat B \flat C D \flat D E \flat F G a \flat
A B C# D D# E F# G# a
B \flat C D E \flat E F G A b \flat
B C# D# E F F# G# A# b

*Uses only white piano keys except for one note

#132 Major 4+ 6- 6

HINDU

8-Tones



Intervals: 1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: W $\frac{1}{2}$ - $\frac{1}{2}$ - Dim

Modal Series Scale Point Tone: MS 8-III:8

Backward: #110 Espla's

Backward MS:SPT: MS 8-IV:1

Alternate Symbols:

- #1 Major 4+ 5 5+
- #1 MAJOR 4+ 6- 6
- #51 Lydian 6- 6
- #51 Lydian 5 5+
- #52 Lydian Augmented 5- 5

Altered (om = omit):

5-Tone	...	#167 Kumoi #3	=	Hindu 2om 5om 6-om 6
		#168 Jap. Pent. #5	=	Hindu 2om 5om 6- 6om
		#173 Hirajoshi #5	=	Hindu 2om 6-om 6om
		#183 Pelog #2	=	Hindu 3om 6-om 6om
		#187 Semi Pent #2	=	Hindu 3om 6-om 6 7om
6-Tone	...	#194 India	=	Hindu 4om 6-om 6om
		#96 Scotch	=	Hindu 4om 6-om 6
		#99 Lydian 6-Tn	=	Hindu 6-om 6 7om
7-Tone	...	#51 Lydian	=	Hindu 6-om 6
		#52 Lydian-Aug.	=	Hindu 5om
9-Tone	...	#141 Hindu	=	Hindu 2- 2

Ethnic Uses:

India (Hindu)

(cont'd)

#132 Major 4+ 6- 6 (cont'd)

HINDU (cont'd)

8-Tones

Source:

Danielou #1, page 117

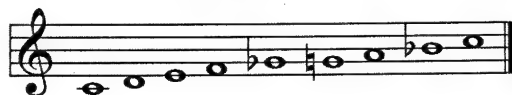
C	D	E	F#	G	A \flat	A	B	c
D \flat	E \flat	F	G	A \flat	A	B \flat	C	d \flat
D	E	F#	G#	A	A#	B	C#	d
E \flat	F	G	A	B \flat	B	C	D	e \flat
E	F#	G#	A#	B	C	C#	D#	e
*F	G	A	B	C	D \flat	D	E	f
G \flat	A \flat	B \flat	C	D \flat	D	E \flat	F	g \flat
G	A	B	C#	D	D#	E	F#	g
A \flat	B \flat	C	D	E \flat	E	F	G	a \flat
A	B	C#	D#	E	F	F#	G#	a
B \flat	C	D	E	F	G \flat	G	A	b \flat
B	C#	D#	F	F#	G	G#	A#	b

*Uses only white piano keys except for one note

#133 Major 5- 5 7-

HINDU

8-Tones



Intervals: 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: M - $\frac{1}{2}$ - $\frac{1}{2}$ - m

Modal Series Scale Point Tone: MS 8-III:1

Backward: --- [Major 3- 5- 5 6- 7-; m - $\frac{1}{2}$ - $\frac{1}{2}$ - mN]

Backward MS:SPT: MS 8-IV:8

Alternate Symbols:

- #1 Major 4 4+ 7-
- #1 MAJOR 5- 5 7-
- #55 Overtone 4- 4
- #58 Zenkla 5 5+
- #62 Mixolydian 4 4+
- #62 Mixolydian 5- 5

Altered (om = omit):

- | | | | | | |
|--------|-----|------|---------------|---|----------------------|
| 5-Tone | ... | #179 | Pelog #3 | = | Hindu 2om 5-om 5om |
| | | #181 | Semi Pent #3 | = | Hindu 2om 5-om 5 6om |
| | | #182 | Bulgarian | = | Hindu 2om 5-om 5 7om |
| | | #187 | Semi Pent #2 | = | Hindu 3om 4om 7om |
| | | #188 | Jap. Pent. #2 | = | Hindu 3om 5- 5om 6om |
| | | #191 | Pentatonic #4 | = | Hindu 3om 5-om 5 6om |
| | | #192 | Pentatonic #1 | = | Hindu 3om 5-om 5 7om |
| | | #193 | Jazz Pent. | = | Hindu 4om 5- 5om 6om |
| | | #197 | Pentatonic #3 | = | Hindu 4om 5-om 5 7om |
| | | #198 | African | = | Hindu 5-om 5om 7om |
| 6-Tone | ... | #85 | Polish | = | Hindu 2om 5-om 5 |
| | | #89 | Overtone 6-T | = | Hindu 3om 5- 5om |
| | | #95 | Appalachian | = | Hindu 3om 5-om 5 |
| | | #98 | Prometheus | = | Hindu 4om 5- 5om |
| | | #99 | Lydian 6-Tn | = | Hindu 4om 7om |
| | | #100 | Scotch | = | Hindu 4om 5-om 5 |
| | | #102 | Mixolyd. 6-Tn | = | Hindu 5-om 5 6om |
| | | #103 | Guido's | = | Hindu 5-om 5om |

(cont'd)

#133 Major 5- 5 7- (cont'd)

HINDU (cont'd)

8-Tones

Altered (cont'd):

7-Tone	...	#55	Overtone	=	Hindu 4om
		#58	Zenkla	=	Hindu 5- 5om
		#62	Mixolydian	=	Hindu 5-om 5
9-Tone	...	#147	Ryo 9-Tone	=	Hindu 7 7+

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 117

C D E F G \flat G A B \flat c
 D \flat E \flat F G \flat G A \flat B \flat B d \flat
 D E F \sharp G G \sharp A B C d
 E \flat F G A \flat A B \flat C D \flat e \flat
 E F \sharp G \sharp A A \sharp B C \sharp D e
 F G A B \flat B C D E \flat f
 F \sharp G \sharp A \sharp B C C \sharp D \sharp E f \sharp
 *G A B C C \sharp D E F g
 A \flat B \flat C D \flat D E \flat F G \flat a \flat
 A B C \sharp D D \sharp E F \sharp G a
 B \flat C D E \flat E F G A \flat b \flat
 B C \sharp D \sharp E F F \sharp G \sharp A b

*Uses only white piano keys except for one note

#134 Major 6- 6

BOP SCALE

8-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: M -1- $\frac{1}{2}$ - Dim

Modal Series Scale Point Tone: MS 8-II:3

Backward: #111 Spanish 8-Tone

Backward MS:SPT: MS 8-II:5

Alternate Symbols:

#1 Major 5 5+

#1 MAJOR 6- 6

#56 Ionian-Augmented 5- 5

#60 Harmonic-Major 6 6+

Alternate Names:

Bebop Major Scale

BOP SCALE

Altered (om = omit):

5-Tone ... #194 India = Bop 4om 6-om 6om

7-Tone ... #1 Major = Bop 6-omit 6

#56 Ionian-Aug. = Bop 5omit

#60 Harmonic-Maj.= Bop 6- 6omit

Ethnic Uses: ---

*C D E F G A \flat A B c
 D \flat E \flat F G \flat A \flat A B \flat C d \flat
 D E F \sharp G A A \sharp B C \sharp d
 E \flat F G A \flat B \flat B C D e \flat
 E F \sharp G \sharp A B C C \sharp D \sharp e
 F G A B \flat C D \flat D E f
 G \flat A \flat B \flat B C \sharp D E \flat F g \flat
 G A B C D D \sharp E F \sharp g
 A \flat B \flat C D \flat E \flat E F G a \flat
 A B C \sharp D E F F \sharp G \sharp a
 B \flat C D E \flat F G \flat G A b \flat
 B C \sharp D \sharp E F \sharp G G \sharp A \sharp b

Source:

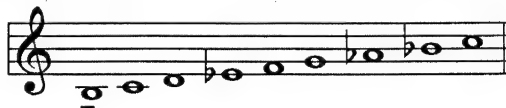
Middlebrook, page 91

*Uses only white piano keys except for one note

#135 Major low 7, high 3- 6- 7-

MAGON ABOT (Jewish)

8-Tones



Intervals: $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1 -1- $\frac{1}{2}$ -1-1

Formula: $\frac{1}{2}$ - m -1- mN

Alternate Symbols:

#1 MAJOR low 7, high 3- 6- 7-

#49 Natural minor low 7+, high 7

Alternate Names:

Jewish

MAGON ABOT

Altered:

7-Tone ... #49 Natural min. = Magon Abot low 7omit

Ethnic Uses:

Jewish (for faith declarations)

NOTE: 1. More than an octave ($6\frac{1}{2}$ steps)
 2. Might appear to be:
 Major 2- 3- 4- 5- 6- 6 8- 9,
 but it is not this. Instead it is the Aeolian
 Scale (Natural minor Scale) with a leading
 tone.

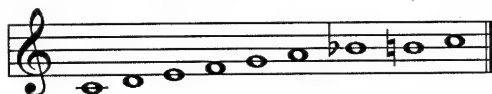
Source:

Colin, page 310

#136 Major 7- 7

MIXOLYDIAN 8-TONE (Hindu)

8-Tones



Intervals: 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$

Formula: M -1-1- (1)

Modal Series Scale Point Tone: MS 8-I:6

Backward: #106 Phrygian 8-Tone #1

Backward MS:SPT: MS 8-I:3

Alternate Symbols:

#1 Major 6 6+

#1 MAJOR 7- 7

#62 Mixolydian 7 7+

Alternate Names:

Bebop 7th

Hindu

MIXOLYDIAN 8-TONE

Altered (om = omit):

5-Tone	...	#178 Hirajoshi #3	=	Mix 8T 2om 5om 7-om 7
		#179 Pelog #3	=	Mix 8T 2om 5om 7- 7om
		#180 Pelog #5	=	Mix 8T 2om 6om 7-om 7
		#181 Semi Pent #3	=	Mix 8T 2om 6om 7- 7om
		#182 Bulgarian	=	Mix 8T 2om 7-om 7om
		#189 Semi Pent #5	=	Mix 8T 3om 6om 7-om 7
		#191 Pentatonic #4	=	Mix 8T 3om 6om 7- 7om
		#192 Pentatonic #1	=	Mix 8T 3om 7-om 7om
		#194 India	=	Mix 8T 4om 6om 7-om 7
		#196 African	=	Mix 8T 4om 6om 7- 7om
		#197 Pentatonic #3	=	Mix 8T 4om 7-om 7om
		#198 African	=	Mix 8T 5om 7-om 7om
6-Tone	...	#85 Polish	=	Mixo 8-Tn 2om 7- 7om
		#86 Ionian 6-Tone	=	Mixo 8-Tn 3om 7-om 7
		#95 Appalachian	=	Mixo 8-Tn 3om 7- 7om
		#96 Scotch	=	Mixo 8-Tn 4om 7-om 7
		#100 Scotch	=	Mixo 8-Tn 4om 7- 7om
		#102 Mixolyd. 6-Tn	=	Mixo 8-Tn 6om 7- 7om
		#103 Guido's	=	Mixo 8-Tn 7-om 7om

(cont'd)

#136 Major 7- 7 (cont'd)

MIXOLYDIAN 8-TONE (cont'd)

8-Tones

Altered (cont'd):

7-Tone	...	#1	Major	=	Mixolyd 8-Tn 7-omit 7
		#62	Mixolydian	=	Mixolyd 8-Tn 7- 7omit
9-Tone	...	#145	Dorian 9-Tone	=	Mixolyd 8-Tn 3- 3
		#147	Ryo 9-Tone	=	Mixolyd 8-Tn 4 4+

Ethnic Uses:

Arabia

India (Hindu)

Source:

Danielou #1, page 211

*C D E F G A B \flat B c
D \flat E \flat F G \flat A \flat B \flat B C d \flat
D E F \sharp G A B C C \sharp d
E \flat F G A \flat B \flat C D \flat D e \flat
E F \sharp G \sharp A B C \sharp D D \sharp e
F G A B \flat C D E \flat E f
G \flat A \flat B \flat B C \sharp D \sharp E F g \flat
*G A B C D E F F \sharp g
A \flat B \flat C D \flat E \flat F G \flat G a \flat
A B C \sharp D E F \sharp G G \sharp a
B \flat C D E \flat F G A \flat A b \flat
B C \sharp D \sharp E F \sharp G \sharp A A \sharp b

*Uses only white piano keys except for one note

End of 8-Tone Scales
Continue for 9-Tone Scales

THE GRAND FINALE: Part 4

9-TONE SCALES

This fourth part of The Grand Finale contains the following 9-Tone Scales (13 Scales):

- #137 Tcherepnin
 - #138 Locrian 9-Tone
 - #139 Phrygian 9-Tone
 - #140 Hindu
 - #141 Hindu
 - #142 Auxiliary Blues
 - #143 Bartok's 9-Tone
 - #144 Aeolian 9-Tone
 - #145 Dorian 9-Tone
 - #146 Armenian, Ancient Church
 - #147 Ryo 9-Tone
 - #148 Tudor Scale
 - #149 Adonai Malakh
-
-

NOTE: Occasionally the order in which "Ethnic Uses" and "Source" is placed within a particular scale's information will differ from "the normal". This is for the reason of making that scale more "readable" by putting the entire scale with its information on only one page (or two opposing pages) rather than two non-opposing pages. However, this isn't always possible to do.

#137 Major 1 1+ 2+ 5 5+

TCHEREPNIN'S SCALE

9-Tones



Intervals: $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: Dim - Dim - Dim

Modal Series Scale Point Tone: MS 9-II:1, 4, & 7

Backward: #137 Tcherpnin's (Same Scale)

Backward MS:SPT: 9-II:1, 4, & 7 (Same)

Alternate Symbols:

#1 MAJOR 1 1+ 2+ 5 5+

#1 Major 1 1+ 2+ 6- 6

#1 Major 2- 3- 3 5 5+

#1 Major 2- 3- 3 6- 6

#6 Neapolitan-Major 3 3+ 6- 6

#14 Neapolitan-minor 3 3+ 6 6+

#30 Double Harmonic 3- 3 6 6+

Altered (om = omit):

5-Tone ... #155 Pelog #1 = Tchr. 3om 4om 6om 7om
 #162 Hirajoshi #4 = Tchr. 2om 3om 6om 7om
 #165 Jap. Pt. #4 = Tch 2om 3om 5 5+om 7om
 7-Tone ... #6 Neapol.-Maj. = Tchr. 3omit 5 5+omit
 #14 Neapol.-min. = Tcherpnin 3omit 6omit
 #30 Dbl Harmonic = Tcherpnin 2omit 6omit

C D \flat E \flat E F G A \flat A B c
 D \flat D E F G \flat A \flat A B \flat C d \flat
 D E \flat F G \flat G A B \flat B C \sharp d
 E \flat E F \sharp G A \flat B \flat B C D e \flat
 E F G A \flat A B C D \flat E \flat e
 F G \flat A \flat A B \flat C D \flat D E f
 G \flat G A B \flat B C \sharp D E \flat F g \flat
 G G \sharp A \sharp B C D D \sharp E F \sharp g
 A \flat A B C D \flat E \flat E F G a \flat
 A B \flat C C \sharp D E F F \sharp G \sharp a
 B \flat B C \sharp D E \flat F F \sharp G A b \flat
 B C D E \flat E F \sharp G A \flat B \flat b

Ethnic Uses: ---

Used by:

A. Tcherpnin

Source:

Slonimsky, page 28

#138 Major 2- 2 3- 5- 5 6- 7-

LOCRIAN 9-TONE (Hindu)

9-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1

Formula: (1) - (7) - mN

Modal Series Scale Point Tone: MS 9-I:6

Backward: #147 Ryo 9-Tone

Backward MS:SPT: MS 9-I:4

Actual Spelling: Major 2- 3 \flat 3- 5- 5 6- 7-

Alternate Symbols:

- #1 Major 1 1+ 3- 4 4+ 6- 7-
- #1 Major 1 1+ 3- 5- 5 6- 7-
- #1 Major 2- 2 3- 4 4+ 6- 7-
- #1 Major 2- 3 \flat 3- 5- 5 6- 7-
- #1 MAJOR 2- 2 3- 5- 5 6- 7-
- #12 Locrian 2 2+ 5 5+
- #15 Phrygian 2 2+ 4 4+
- #15 Phrygian 2 2+ 5- 5
- #42 Greek 2- 2 4- 4
- #45 Half-Diminished 1 1+ 5 5+
- #45 Half-Diminished 2- 2 5 5+
- #49 Natural minor 2- 2 4 4+
- #49 Natural minor 2- 2 5- 5

Alternate Names:

Hindu

LOCRIAN 9-TONE

Altered (om = omit):

- 5-Tone ... #153 Semi #4 = Loc 9T: 2- 2om 4om 5- 5om 7om
- #154 Japan. = Loc 9T: 2-om 2om 4om 5- 5om
- #155 Pelog #1 = Loc 9T: 2- 2om 4om 5-om 5 7om
- #156 Pelog #4 = Loc 9T: 2- 2om 3om 5- 5om 7om
- #157 Hira. #2 = Loc 9T: 2- 2om 3om 5- 5om 6om
- #158 Pent. #5 = Loc 9T: 2-om 2om 5-om 5om
- #159 Kumoi#5 = Loc 9T: 2-om 2om 5- 5om 6om

(cont'd)

#138 Major 2- 2 3- 5- 5 6- 7- (cont'd) **LOCRIAN 9-TONE** (cont'd) 9-Tones

Altered (cont'd):

5-Tone (cont'd)	...	#160 Javanese	=	Loc 9T: 2- 2om 5-om 5om 7om
		#162 Hira. #4	=	Loc 9T: 2- 2om 3om 5-om 5 7om
		#163 Kumoi#2	=	Loc 9T: 2- 2om 3om 5-om 5 6om
		#164 Pent. #2	=	Loc 9T: 2-om 2om 5-om 5 6om
		#184 Hira. #1	=	Loc 9T: 2-om 2 4om 5-om 5 7om
		#185 African	=	Loc 9T: 2-om 2 4om 5-om 5 6om
		#188 Jap.P.#2	=	Loc 9T: 2-om 2 3om 5- 5om 6om
		#190 Kumoi#4	=	Loc 9T: 2-om 2 3om 5-om 5 7om
		#191 Pent. #4	=	Loc 9T: 2-om 2 3om 5-om 5 6om
6-Tone	...	#68 Loc 6-T	=	Loc 9T: 2- 2om 4om 5- 5om
		#71 Abuselik	=	Loc 9T: 2- 2om 3om 5- 5om
		#72 Phrg 6T	=	Loc 9T: 2- 2om 5-om 5om
		#73 In Scale	=	Loc 9T: 2- 2om 3om 5-om 5
		#74 Samanta	=	Loc 9T: 2- 2om 5-om 5 7om
		#75 Irish	=	Loc 9T: 2-om 2om 5-om 5
		#90 Aeol 6T	=	Loc 9T: 2-om 2 5-om 5om
		#92 Greek	=	Loc 9T: 2-om 2 5-om 5 6om
		#93 Glinka	=	Loc 9T: 2-om 2 5-om 5 7om
7-Tone	...	#12 Locrian	=	Locrian 9-Tn: 2- 2om 5- 5om
		#15 Phrygn.	=	Locrian 9-Tn: 2- 2om 5-om 5
		#42 Greek	=	Locrian 9-Tn: 2-om 2 4om
		#45 Half-Dim	=	Locrian 9-Tn: 2-om 2 5- 5om
		#49 Nat. min	=	Locrian 9-Tn: 2-om 2 5-om 5
8-Tone	...	#105 Loc 8#1	=	Locrian 9-Tn: 5- 5om
		#106 Phr 8#1	=	Locrian 9-Tn: 5-om 5
		#114 Loc 8#2	=	Locrian 9-Tn: 2- 2om

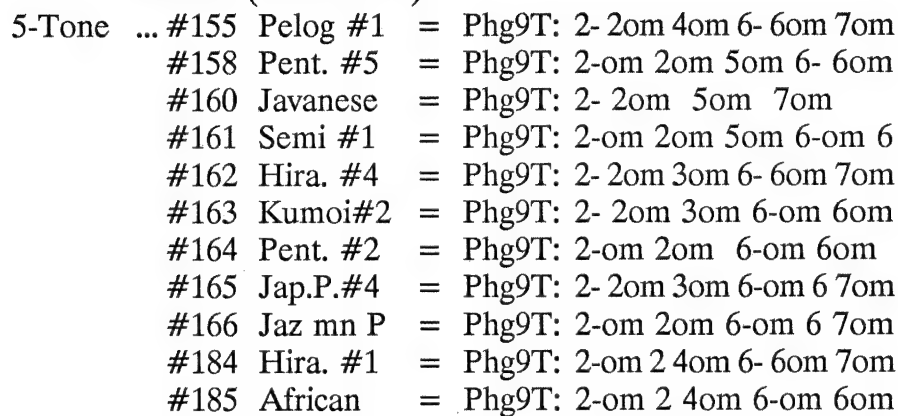
C D \flat D E \flat F G \flat G A \flat B \flat c
 D \flat D E \flat E F \sharp G A \flat A B d \flat
 D E \flat E F G A \flat A B \flat C d
 E \flat E F G \flat A \flat A B \flat B D \flat e \flat
 E F F \sharp G A A \sharp B C D e
 F G \flat G A \flat B \flat B C D \flat E \flat f
 F \sharp G G \sharp A B C C \sharp D E f \sharp
 G A \flat A B \flat C D \flat D E \flat F g
 A \flat A B \flat B C \sharp D E \flat E G \flat a \flat
 A A \sharp B C D D \sharp E F G a
 B \flat B C D \flat E \flat E F G \flat A \flat b \flat
 B C C \sharp D E F F \sharp G A b

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 119



(cont'd)

Altered (cont'd):

5-Tone (cont'd)	... #186 Kumoi#1	= Phg9T: 2-om 2 4om 6-om 6 7om
	#190 Kumoi#4	= Phg9T: 2-om 2 3om 6- 6om 7om
	#191 Pent. #4	= Phg9T: 2-om 2 3om 6-om 6om
	#192 Pent. #1	= Phg9T: 2-om 2 3om 6-om 6 7om
6-Tone	... #72 Phg 6-T	= Phrg 9T: 2- 2om 5om 6- 6om
	#73 In Scl.	= Phrg 9T: 2- 2om 3om 6- 6om
	#74 Samanta	= Phrg 9T: 2- 2om 6- 6om 7om
	#75 Irish	= Phrg 9T: 2-om 2om 6- 6om
	#77 Dor 6-T	= Phrg 9T: 2-om 2om 6-om 6
	#86 Ion 6-T	= Phrg 9T: 2-om 2 3om 6-om 6
	#88 Akebono	= Phrg 9T: 2-om 2 4om 6-om 6
	#90 Aeol 6-T	= Phrg 9T: 2-om 2 5om 6- 6om
	#92 Greek	= Phrg 9T: 2-om 2 6-om 6om
	#93 Glinka	= Phrg 9T: 2-om 2 6- 6om 7om
7-Tone	... #94 Hungrn.	= Phrg 9T: 2-om 2 6-om 6 7om
	#95 Appal.	= Phrg 9T: 2-om 2 3om 6-om 6
	#15 Phrygn.	= Phrygian 9Tn 2- 2om 6- 6om
	#16 Java.	= Phrygian 9Tn 2- 2om 6-om 6
	#49 Nat.min.	= Phrygian 9Tn 2-om 2 6- 6om
8-Tone	... #50 Dorian	= Phrygian 9Tn 2-om 2 6-om 6
	#106 Prg. 8#1	= Phrygian 9-Tone 6- 6omit
	#117 Prg. 8#2	= Phrygian 9-Tone 2- 2omit
	#128 Aeol 8#2	= Phrygian 9-Tone 2-om 2

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 120

C D \flat D E \flat F G A \flat A B \flat c
 D \flat D E \flat E F \sharp G \sharp A B \flat B d \flat
 D D \sharp E F G A A \sharp B C d
 E \flat E F G \flat A \flat B \flat B C D \flat e \flat
 E F F \sharp G A B C C \sharp D e
 F G \flat G A \flat B \flat C D \flat D E \flat f
 F \sharp G G \sharp A B C \sharp D D \sharp E f \sharp
 G A \flat A B \flat C D E \flat E F g
 A \flat A B \flat B C \sharp D \sharp E F G \flat a \flat
 A A \sharp B C D E F F \sharp G a
 B \flat B C D \flat E \flat F G \flat G A \flat b \flat
 B C C \sharp D E F \sharp G G \sharp A b

#140 Major 2- 2 4 4+

HINDU

9-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1-1- $\frac{1}{2}$

Formula: (2) - (1) - M

Modal Series Scale Point Tone: MS 9-I:7

Backward: --- [Major 2- 3- 5- 5 6- 7- 7]
[mN - (1) - (7)]

Backward MS:SPT: MS 9-I:3

Alternate Symbols:

- #1 Major 1 1+ 4 4+
- #1 Major 1 1+ 5- 5
- #1 MAJOR 2- 2 4 4+
- #1 Major 2- 2 5- 5
- #2 Ananda 2 2+ 4 4+
- #17 Marava 2 2+ 4- 4
- #23 Chromatic Lydian 2 2+ 5 5+
- #51 Lydian 1 1+ 4- 4
- #51 Lydian 2- 2 4- 4

Altered (om = omit):

- 5-Tone ... #167 Kumoi #3 = Hindu 2-om 2om 4om 4+ 5om
- #173 Hira. #5 = Hindu 2-om 2om 4om 4+ 6om
- #178 Hira. #3 = Hindu 2-om 2om 4 4+om 5om
- #180 Pelog #5 = Hindu 2-om 2om 4 4+om 6om
- #182 Bulgarn. = Hindu 2-om 2om 4 4+om 7om
- #183 Pelog #2 = Hindu 2-om 2 3om 4om 4+ 6om
- #187 Semi P#2 = Hindu 2-om 2 3om 4om 4+ 7om
- #189 Semi P#5 = Hindu 2-om 2 3om 4 4+om 6om
- #192 Pent. #1 = Hindu 2-om 2 3om 4 4+om 7om
- #197 Pent. #3 = Hindu 2-om 2 4om 4+om 7om
- #198 African = Hindu 2-om 2 4 4+om 5om 7om
- #78 Panchna. = Hindu 2- 2om 4om 4+ 5om
- #86 Ion. 6-T = Hindu 2-om 2 3om 4 4+om
- #96 Scotch = Hindu 2-om 2 4om 4+om
- #99 Lyd 6-T = Hindu 2-om 2 4om 4+ 7om

(cont'd)

#140 Major 2- 2 4 4+ (cont'd) HINDU (cont'd)

9-Tones

Altered (cont'd):

6-Tone	... #103	Guido's	= Hindu 2-om 2 4 4+om 7om
7-Tone	... #1	Major	= Hindu 2-omit 2 4 4+omit
	#2	Ananda	= Hindu 2- 2omit 4 4+omit
	#17	Marava	= Hindu 2- 2omit 4omit 4+
	#23	Chr Lyd	= Hindu 2- 2omit 5omit
	#51	Lydian	= Hindu 2-omit 2 4omit 4+
8-Tone	... #104	Hindu	= Hindu 4 4+omit
	#107	Hindu	= Hindu 4omit 4+
	#118	Buzurg	= Hindu 2- 2omit
	#131	Ryo 8-T	= Hindu 2-omit 2

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 119

C D \flat D E F F \sharp G A B c
 D \flat D E \flat F G \flat G A \flat B \flat C d \flat
 D D \sharp E F \sharp G G \sharp A B C \sharp d
 E \flat E F G A \flat A B \flat C D e \flat
 E F F \sharp G \sharp A A \sharp B C \sharp D \sharp e
 F G \flat G A B \flat B C D E f
 F \sharp G G \sharp A \sharp B C D \flat E \flat F f \sharp
 G A \flat A B C D \flat D E F \sharp g
 A \flat A B \flat C D \flat D E \flat F G a \flat
 A A \sharp B C \sharp D D \sharp E F \sharp G \sharp a
 B \flat B C D E \flat E F G A b \flat
 B C C \sharp D \sharp E F F \sharp G \sharp A \sharp b

#141 Major 2- 2 4+ 6- 6

HINDU

9-Tones



Intervals: $\frac{1}{2}$ - $\frac{1}{2}$ -1 - 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$

Formula: (2) - (7) - Dim

Modal Series Scale Point Tone: MS 9-I:2

Backward: --- [Major 2- 3- 3 5- 6- 7- 7]
[Dim - (2) - (7)]

Backward MS:SPT: MS 9-I:8

Actual Spelling: Major 1 1+ 4+ 6- 6

Alternate Symbols:

- #1 Major 1 1+ 4+ 5 5+
- #1 Major 1 1+ 4+ 6- 6
- #1 Major 2- 2 4+ 5 5+
- #1 MAJOR 2- 2 4+ 6- 6
- #17 Marava 2 2+ 6- 6
- #20 Chromatic Hypolydian 2 2+ 6 6+
- #51 Lydian 1 1+ 5 5+
- #51 Lydian 2- 2 5 5+
- #51 Lydian 2- 2 6- 6
- #52 Lydian-Augmented 1 1+ 5- 5
- #52 Lydian-Augmented 2- 2 5- 5

Altered (om = omit):

- 5-Tone ... #167 Kumoi #3 = Hindu 2-om 2om 5om 6-om 6
- #168 Jap. P.#5 = Hindu 2-om 2om 5om 6- 6om
- #172 Vibhasa = Hindu 2- 2om 5om 6-om 6 7om
- #173 Hiraj. #5 = Hindu 2-om 2om 6-om 6om
- #175 Rewa = Hindu 2- 2om 4om 6- 6om 7om
- #183 Pelog #2 = Hindu 2-om 2 3om 6-om 6om
- #187 Semi #2 = Hindu 2-om 2 3om 6-om 6 7om
- #195 Jap. P.#1 = Hindu 2-om 2 4om 6- 6om 7om
- #197 Pent. #3 = Hindu 2-om 2 4om 6-om 6 7om

(cont'd)

#141 Major 2- 2 4+ 6- 6 (cont'd) HINDU (cont'd)

9-Tones

Altered (cont'd):

6-Tone ...	#78	Panchana	= Hindu 2- 2om 5om 6-om 6
	#81	Comb-Alt	= Hindu 2- 2om 6- 6om 7om
	#96	Scotch	= Hindu 2-om 2 4om 6-om 6
	#99	Lyd. 6-T	= Hindu 2-om 2 6-om 6 7om
7-Tone ...	#17	Marava	= Hindu 2- 2omit 6-omit 6
	#20	C.Hypoly	= Hindu 2- 2omit 6- 6omit
	#51	Lydian	= Hindu 2-omit 2 6-omit 6
	#52	Lyd-Aug	= Hindu 2-omit 2 5omit
8-Tone ...	#107	Hindu	= Hindu 6-omit 6

Ethnic Uses:

India (Hindu)

Source:

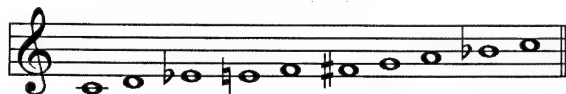
Danielou #1, page 119

C D \flat D E F \sharp G A \flat A B c
 D \flat D E \flat F G A \flat A B \flat C d \flat
 D D \sharp E F \sharp G \sharp A A \sharp B C \sharp d
 E \flat E F G A B \flat B C D e \flat
 E F F \sharp G \sharp A \sharp B C C \sharp D \sharp e
 F G \flat G A B C D \flat D E f
 G \flat G A \flat B \flat C D \flat D E \flat F g \flat
 G G \sharp A B C \sharp D D \sharp E F \sharp g
 A \flat A B \flat C D E \flat E F G a \flat
 A A \sharp B C \sharp D \sharp E F F \sharp G \sharp a
 B \flat B C D E F G \flat G A b \flat
 B C D \flat E \flat F G \flat G A \flat B \flat b

#142 Major 3- 3 4 4+ 7-

AUXILIARY BLUES

9-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}$ - $\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$ - $1-\frac{1}{2}-1$

Formula: (7) - (1) - m

Modal Series Scale Point Tone: MS 9-III:1

Backward: --- [Major 3- 5- 5 6- 6 7-; m-(1)-(2)]

Backward MS:SPT: MS 9-IV:8

Alternate Symbols:

- #1 Major 2 2+ 4 4+ 7-
- #1 Major 2 2+ 5- 5 7-
- #1 MAJOR 3- 3 4 4+ 7-
- #1 Major 3- 3 5- 5 7-
- #22 Hungarian-Major 2- 2 4- 4
- #32 Roumanian-Major 2- 2 4 4+
- #44 Roumanian-minor 3 3+ 4- 4
- #46 Zangula 3 3+ 5 5+
- #50 Dorian 3- 3 4 4+
- #55 Overtone 3- 3 4- 4
- #58 Zenkla 3- 3 5 5+
- #62 Mixolydian 3- 3 4 4+
- #62 Mixolydian 3- 3 5- 5

Alternate Names:

AUXILIARY BLUES

Jazz Scale (used against Dominant 7th chord)

Altered (om = omit):

- 5-Tone ... #166 Jaz minP = Ax Bl 2om 3- 3om 4 4+om 7om
- #169 Dim Pent = Ax Bl 2om 4om 4+ 5om 6om
- #174 Pent-Dim = Ax Bl 2om 4om 4+om 6om
- #185 African = Ax Bl 3- 3om 4om 4+om 6om
- #186 Kumoi #1 = Ax Bl 3- 3om 4om 4+om 7om
- #198 African = Ax Bl 3-om 3 4 4+om 5om 7om

(cont'd)

#142 Major 3- 3 4 4+ 7- (cont'd) AUXILIARY BLUES (cont'd)

9-Tones

Altered (cont'd):

6-Tone	...	#66 Blues	= Auxil. Bls. 2om 3- 3om 6om
		#88 Akebono	= Auxil. Bls. 3- 3om 4om 4+om
		#89 Ovrtn 6T	= Auxil. Bls. 3-om 3om 4om 4+
7-Tone	...	#22 Hung-Mj.	= Auxil. Bls. 2omit 4omit 4+
		#32 Roum-Mj.	= Auxil. Bls. 2omit 4 4+omit
		#44 Roum-mn	= Auxil. Bls. 3- 3omit 4omit 4+
		#46 Zangula	= Auxil. Bls. 3- 3omit 5omit
		#50 Dorian	= Auxil. Bls. 3- 3omit 4 4+omit
		#55 Overtone	= Auxil. Bls. 3-omit 3 4omit 4+
		#58 Zenkla	= Auxil. Bls. 3-omit 3 5omit
		#62 Mixolyd.	= Auxil. Bls. 3-omit 3 4 4+omit

Ethnic Uses: ---**Source:**

Kynaston, page 20

C D E \flat E F F \sharp G A B \flat c
D \flat E \flat E F G \flat G A \flat B \flat B d \flat
D E F F \sharp G G \sharp A B C d
E \flat F G \flat G A \flat A B \flat C D \flat e \flat
E F \sharp G G \sharp A A \sharp B C \sharp D e
F G A \flat A B \flat B C D E \flat f
F \sharp G \sharp A A \sharp B C C \sharp D \sharp E f \sharp
G A A \sharp B C C \sharp D E F g
A \flat B \flat B C D \flat D E \flat F G \flat a \flat
A B C C \sharp D D \sharp E F \sharp G a
B \flat C D \flat D E \flat E F G A \flat b \flat
B C \sharp D D \sharp E F F \sharp G \sharp A b

#143 Major 3- 3 5- 5

BARTOK'S 9-TONE

9-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2}$ - $\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$ - $1-1-\frac{1}{2}$

Formula: (7) - (1) - M

Modal Series Scale Point Tone: MS 9-IV:1

Backward: --- [Major 2- 3- 5- 5 6- 6 7-]
[mN - (1) - (2)]

Backward MS:SPT: MS 9-III:8

Alternate Symbols:

#1 Major 3- 3 4 4+

#1 MAJOR 3- 3 5- 5

#34 Melodic minor 3 3+ 4 4+

#34 Melodic minor 3 3+ 5- 5

#38 Conway's 7-Tone 3 3+ 6

Altered (om = omit):

5-Tone	...	#166	Jz min P	= Bartk. 2om 3- 3om 5-om 5 7om
		#178	Hira #3	= Bartk. 2om 3-om 3 5-om 5om
		#180	Pelog #5	= Bartk. 2om 3-om 3 5-om 5 6om
		#182	Bulgarn.	= Bartk. 2om 3-om 3 5-om 5 7om
		#189	Semi #5	= Bartk. 3-om 3om 5-om 5 6om
		#192	Pent. #1	= Bartk. 3-om 3om 5-om 5 7om
		#194	India	= Bartk. 3-om 3 4om 5-om 5 6om
		#197	Pent. #3	= Bartk. 3-om 3 4om 5-om 5 7om
		#198	African	= Bartk. 3-om 3 5-om 5om 7om
6-Tone	...	#65	African	= Bartok 2om 3- 3om 5-om 5
		#86	Ion 6-Tn	= Bartok 3-om 3om 5-om 5
		#96	Scotch	= Bartok 3-om 3 4om 5-om 5
		#103	Guido's	= Bartok 3-om 3 5-om 5 7om
7-Tone	...	#1	Major	= Bartok 3-omit 3 5-omit 5
		#34	Mel. min.	= Bartok 3- 3omit 5-omit 5
		#38	Conwy 7	= Bartok 3- 3om 6om
8-Tone	...	#124	Conwy 8-T	= Bartok 3- 3om [6-om/6]
		#131	Ryo 8-Tn	= Bartok 3-om 3

(cont'd)

#143 Major 3- 3 5- 5 (cont'd)

BARTOK'S 9-TONE (cont'd)

9-Tones

Ethnic Uses: ---

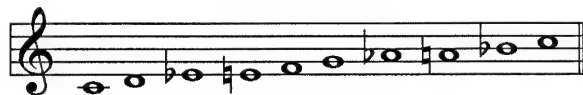
Used by:
BartokSource:
Yates, page 179

C	D	E \flat	E	F	F \sharp	G	A	B	c
D \flat	E \flat	E	F	G \flat	G	A \flat	B \flat	C	d \flat
D	E	F	F \sharp	G	G \sharp	A	B	C \sharp	d
E \flat	F	G \flat	G	A \flat	A	B \flat	C	D	e \flat
E	F \sharp	G	G \sharp	A	A \sharp	B	C \sharp	D \sharp	e
F	G	A \flat	A	B \flat	B	C	D	E	f
G \flat	A \flat	A	B \flat	B	C	D \flat	E \flat	F	g \flat
G	A	A \sharp	B	C	C \sharp	D	E	F \sharp	g
A \flat	B \flat	B	C	D \flat	D	E \flat	F	G	a \flat
A	B	C	C \sharp	D	D \sharp	E	F \sharp	G \sharp	a
B \flat	C	D \flat	D	E \flat	E	F	G	A	b \flat
B	C \sharp	D	D \sharp	E	F	F \sharp	G \sharp	A \sharp	b

#144 Major 3- 3 6- 6 7-

AEOLIAN 9-TONE (Hindu)

9-Tones



Intervals: $1-\frac{1}{2}-\frac{1}{2} - \frac{1}{2}-1-\frac{1}{2} - \frac{1}{2}-\frac{1}{2}-1$

Formula: (7) - Dim - (2)

Modal Series Scale Point Tone: MS 9-I:5

Backward: #144 Aeolian 9-Tone (Same Scale)

Backward MS:SPT: MS 9-I:5 (Same)

Actual Spelling: Major 3- 4- 4 6- 6 7-

Alternate Symbols:

- #1 Major 3- 4- 4 5 5+ 7-
- #1 Major 3- 4- 4 6- 6 7-
- #1 Major 3- 3 5 5+ 7-
- #1 MAJOR 3- 3 6- 6 7-
- #43 Greek 4 4+ 6 6+
- #49 Natural minor 3 3+ 6 6+
- #50 Dorian 3 3+ 6- 6
- #50 Dorian 3 3+ 5 5+
- #59 Rummel-Meia 3- 3 5- 5
- #61 Hindustan 3- 3 6 6+
- #62 Mixolydian 2 2+ 5 5+
- #62 Mixolydian 2 2+ 6- 6
- #62 Mixolydian 3- 3 5 5+
- #62 Mixolydian 3- 3 6- 6

C D Eb E F G Ab A Bb c
 Db Eb E F Gb Ab A Bb B db
 D E F F# G A A# B C d
 Eb F Gb G Ab Bb B C Db eb
 E F# G G# A B C C# D e
 F G Ab A Bb C Db D Eb f
 F# G# A A# B C# D D# E f#
 G A A# B C D D# E F g
 Ab Bb B C Db Eb E F Gb ab
 A B C C# D E F F# G a
 Bb C Db D Eb F Gb G Ab bb
 B C# D D# E F# G G# A b

Alternate Names:

AEOLIAN 9-TONE

Hindu

Ethnic Uses:

India (Hindu)

Source:

Danielou #1, page 119

Note: "Altered" is out of its regular position
& is on the opposing page.

(cont'd)

#144 Major 3- 3 6- 6 7- (cont'd)

AEOLIAN 9-TONE (cont'd)

9-Tones

Altered (om = omit):			
5-Tone ...	#158	Pent. #5	= Aeol.9-T: 2om 3- 3om 5om 6- 6om
	#161	Semi. #1	= Aeol.9: 2om 3- 3om 5om 6-om 6
	#164	Pent. #2	= Aeol.9-T: 2om 3- 3om 6-om 6om
	#166	Jazz min. Pt	= Aeol.9-T: 2om 3- 3om 6-om 6 7om
	#171	Jap. P.#3	= Aeol.9-T: 2om 4om 5om 6- 6om
	#174	Pent Dom	= Aeol.9-T: 2om 4om 6-om 6om
	#179	Pelog #3	= Aeol.9: 2om 3-om 3 5om 6-om 6
	#181	Semi #3	= Aeol.9-T: 2om 3-om 3 6-om 6om
	#182	Bulgarn.	= Aeol.9-T: 2om 3-om 3 6-om 6 7om
	#184	Hira. #1	= Aeol.9-T: 3- 3om 4om 6- 6om 7om
	#185	African	= Aeol.9-T: 3- 3om 4om 6-om 6om
	#186	Kumoi #1	= Aeol.9-T: 3- 3om 4om 6-om 6 7om
	#190	Kumoi #4	= Aeol.9-T: 3-om 3om 6- 6om 7om
	#191	Pent. #4	= Aeol.9-T: 3-om 3om 6-om 6om
	#192	Pent. #1	= Aeol.9-T: 3-om 3om 6-om 6 7om
	#195	Jap. P.#1	= Aeol.9-T: 3-om 3 4om 6- 6om 7om
	#196	African	= Aeol.9-T: 3-om 3 4om 6-om 6om
	#197	Pent. #3	= Aeol.9-T: 3-om 3 4om 6-om 6 7om
	#198	African	= Aeol.9-T: 3-om 3 5om 6-om 6 7om
6-Tone ...	#75	Irish	= Aeol. 9-T: 2om 3- 3om 6- 6om
	#77	Dor 6-Tn	= Aeol. 9-T: 2om 3- 3om 6-om 6
	#85	Polish	= Aeol. 9-T: 2om 3-om 3 6-om 6
	#88	Akebono	= Aeol. 9-T: 3- 3om 4om 6-om 6
	#90	Aeol 6-T	= Aeol. 9-T: 3- 3om 5om 6- 6om
	#92	Greek	= Aeol. 9-T: 3- 3om 6-om 6om
	#93	Glinka's	= Aeol. 9-T: 3- 3om 6- 6om 7om
	#94	Hungarn.	= Aeol. 9-T: 3- 3om 6-om 6 7om
	#95	Appalch.	= Aeol. 9-T: 3-om 3om 6-om 6
	#100	Scotch	= Aeol. 9-T: 3-om 3 4om 6-om 6
	#102	Mixo 6-T	= Aeol. 9-T: 3-om 3 6-om 6om
	#103	Guido's	= Aeol. 9-T: 3-om 3 6-om 6 7om
7-Tone ...	#32	Roum.-Maj.	= Aeolian 9-Tn: 2om 6-om 6
	#43	Greek	= Aeolian 9-Tn: 4omit 6- 6omit
	#48	Ptolemy's	= Aeolian 9-Tn: 3- 3om 7om
	#49	Nat. min.	= Aeolian 9-Tn: 3- 3om 6- 6om
	#50	Dorian	= Aeolian 9-Tn: 3- 3om 6-om 6
	#59	Rum-Mea	= Aeolian 9-Tn: 3-om 3 5om
	#61	Hindustn	= Aeolian 9-Tn: 3-om 3 6- 6om
	#62	Mixolyd.	= Aeolian 9-Tn: 3-om 3 6-om 6
8-Tone ...	#122	Aeo 8#1	= Aeolian 9-Tn: 6- 6omit
	#123	Dor 8#1	= Aeolian 9-Tn: 6-omit 6
	#128	Aeo 8#2	= Aeolian 9-Tn: 3- 3omit

NOTE: The order of "Ethnic Uses" & "Source" is on the opposing page for this scale, rather than the usual place.

#145 Major 3- 3 7- 7

DORIAN 9-TONE (Hindu)

9-Tones



Intervals: $1 - \frac{1}{2} - \frac{1}{2} - 1 - 1 - \frac{1}{2} - \frac{1}{2} - \frac{1}{2}$

Formula: (7) - mN - (1)

Modal Series Scale Point Tone: MS 9-I:9

Backward: #139 Phrygian 9-Tone

Backward MS:SPT: MS 9-I:1

Actual Spelling: Major 3- 3 7- 8- 8

Alternate Symbols:

- #1 Major 2 2+ 7- 7
- #1 Major 2 2+ 7- 8- 8
- #1 MAJOR 3- 3 7- 7
- #1 Major 3- 3 7- 8- 8
- #32 Roumanian-Major 2- 2 7 7+
- #34 Melodic minor 3 3+ 6 6+
- #34 Melodic minor 3 3+ 7- 7
- #50 Dorian 3 3+ 7 7+
- #62 Mixolydian 2 2+ 7 7+
- #62 Mixolydian 3-3 7 7+

Alternate Names:

DORIAN 9-TONE
Hindu
Jazz Scale

Altered (om = omit):

- 5-Tone ... #161 Semi #1 = Dor 9-T: 2om 3- 3om 5om 7- 7om
 #164 Pent. #2 = Dor 9-T: 2om 3- 3om 6om 7- 7om
 #174 Pen-Dom = Dor 9-T: 2om 4om 6om 7- 7om
 #178 Hira #3 = Dor 9: 2om 3-om 3 5om 7-om 7
 #179 Pelog #3 = Dor 9-T: 2om 3-om 3 5om 7- 7om
 #180 Pelog #5 = Dor 9: 2om 3-om 3 6om 7-om 7
 #181 Semi #3 = Dor 9-T: 2om 3-om 3 6om 7- 7om

(cont'd)

#145 Major 3- 3 7- 7 (cont'd)

DORIAN 9-TONE (cont'd)

9-Tones

Altered (cont'd):

5-Tone (cont'd)	... #182 Bulgarn.	= Dor 9-T: 2om 3-om 3 7-om 7om
	#185 African	= Dor 9-T: 3- 3om 4om 6om 7- 7om
	#186 Kumoi #1	= Dor 9-T: 3- 3om 4om 7-om 7om
	#189 Semi #5	= Dor 9-T: 3-om 3om 6om 7-om 7
	#191 Pent #4	= Dor 9-T: 3-om 3om 6om 7- 7om
	#192 Pent #1	- Dor 9-T: 3-om 3om 7-om 7om
	#197 Pent #3	= Dor 9-T: 3-om 3 4om 7-om 7om
6-Tone	... #65 African	= Dor 9-T: 2om 3- 3om 7-om 7
	#77 Dor 6-Tn	= Dor 9-T: 2om 3- 3om 7- 7om
	#85 Polish	= Dor 9-T: 2om 3-om 3 7- 7om
	#86 Ion 6-Tn	= Dor 9-T: 3-om 3om 7-om 7
	#88 Akebono	= Dor 9-T: 3- 3om 4om 7- 7om
	#92 Greek	= Dor 9-T: 3- 3om 6om 7- 7om
	#94 Hungarn.	= Dor 9-T: 3- 3om 7-om 7om
	#95 Appalch.	= Dor 9-T: 3-om 3om 7- 7om
	#96 Scotch	= Dor 9-T: 3-om 3 4om 7-om 7
	#100 Scotch	= Dor 9-T: 3-om 3 4om 7- 7om
	#102 Mixo 6-T	= Dor 9-T: 3-om 3 6om 7- 7om
	#103 Guido's	= Dor 9-T: 3-om 3 7-om 7om
7-Tone	... #1 Major	= Dorian 9-Tn: 3-om 3 7-om 7
	#32 Rom.-Maj	= Dorian 9-Tn: 2om 7- 7om
	#34 Mel. min.	= Dorian 9-Tn: 3- 3om 7-om 7
	#50 Dorian	= Dorian 9-Tn: 3- 3om 7- 7om
	#62 Mixolyd.	= Dorian 9-Tn: 3-om 3 7- 7om
8-Tone	... #123 Dor. 8#1	= Dorian 9-Tn: 7- 7omit
	#130 Dor. 8#2	= Dorian 9-Tn: 3- 3omit
	#136 Mixo 8-T	= Dorian 9-Tn: 3-omit 3

C D E \flat E F G A B \flat B c
 D \flat E \flat E F G \flat A \flat B \flat B C d \flat
 D E F F \sharp G A B C C \sharp d
 E \flat F G \flat G A \flat B \flat C D \flat D e \flat
 E F \sharp G G \sharp A B C \sharp D D \sharp e
 F G A \flat A B \flat C D E \flat E f
 G \flat A \flat A B \flat B C \sharp D \sharp E F g \flat
 G A A \sharp B C D E F F \sharp g
 A \flat B \flat B C D \flat E \flat F G \flat G a \flat
 A B C C \sharp D E F \sharp G G \sharp a
 B \flat C D \flat D E \flat F G A \flat A b \flat
 B C \sharp D D \sharp E F \sharp G \sharp A A \sharp b

Ethnic Uses:

India (Hindu)

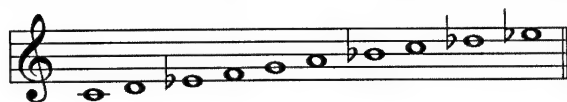
Source:

Danielou #1, page 119

#146 Major 3- 7- 9- 10-

ARMENIAN, Ancient Church

9-Tones



Intervals: 1- $\frac{1}{2}$ -1 -1- 1- $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1

Formula: m -1- m - $\frac{1}{2}$ -1

Alternate Symbols:

#1 MAJOR 3- 7- 9- 10-

#50 Dorian 9- 10-

Ethnic Uses:

Ancient Armenian Church

NOTE: 1. More than an octave. $7\frac{1}{2}$ steps

2. This may appear to be:

Intervals: 1- $\frac{1}{2}$ -1 - 1-1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ -1

Formula: m - M - m

But it isn't. It is the 7-Tone
Dorian Scale with the added
trichord as shown directly under
the Staff (above).

#147 Major 4 4+ 7- 7

RYO 9-TONE (Japanese)

9-Tones



Intervals: 1-1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$

Formula: M - (2) - (1)

Modal Series Scale Point Tone: MS 9-I:4

Backward: #138 Locrian 9-Tone

Backward MS:SPT: MS 9-I:6

Hindu Spelling: Major 5- 5 7- 7

Alternate Symbols:

- #1 Major 4 4+ 6 6+
- #1 MAJOR 4 4+ 7- 7
- #1 Major 5- 5 6 6+
- #1 Major 5- 5 7- 7
- #51 Lydian 4- 4 6 6+
- #51 Lydian 4- 4 7- 7
- #55 Overtone 4- 4 7 7+
- #58 Zenkla 5 5+ 7 7+
- #62 Mixolydian 4 4+ 7 7+
- #62 Mixolydian 5- 5 7 7+

Alternate Names:

C	D	E	F	F#	G	A	Bb	B	c	Bebop Scale
Db	Eb	F	Gb	G	Ab	Bb	B	C	db	Hindu
D	E	F#	G	G#	A	B	C	Db	d	Japanese
Eb	F	G	Ab	A	Bb	C	Db	D	eb	RYO 9-TONE
E	F#	G#	A	A#	B	C#	D	D#	e	Taishikicho (on E) (Japanese)
F	G	A	A#	B	C	D	D#	E	f	Togaku System (on D) (Japanese)
Gb	Ab	Bb	B	C	Db	Eb	E	F	gb	
G	A	B	C	C#	D	E	F	F#	g	
Ab	Bb	C	Db	D	Eb	F	Gb	G	ab	
A	B	C#	D	D#	E	F#	G	G#	a	
Bb	C	D	Eb	E	F	G	Ab	A	bb	
B	C#	D#	E	F	F#	G#	A	A#	b	

Ethnic Uses:

- India (Hindu)
- Japan

Source:

Colin, page 309

NOTE: "Altered" is out of its regular position & is on the following page

(cont'd)

#147 Major 4 4+ 7- 7 (cont'd)

RYO 9-TONE (cont'd)

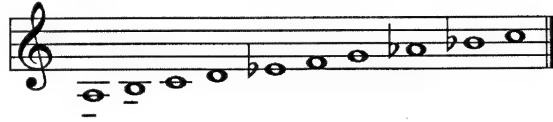
9-Tones

Altered (om = omit):

5-Tone	...	#167 Kumoi #3	= Ryo9: 2om 4om 4+ 5om 7-om 7
		#173 Hira. #5	= Ryo9: 2om 4om 4+ 6om 7-om 7
		#178 Hira. #3	= Ryo9: 2om 4 4+om 5om 7-om 7
		#179 Pelog #3	= Ryo9: 2om 4 4+om 5om 7- 7om
		#180 Pelog #5	= Ryo9: 2om 4 4+om 6om 7-om 7
		#181 Semi. #3	= Ryo9: 2om 4 4+om 6om 7- 7om
		#182 Bulgarn.	= Ryo9: 2om 4 4+om 7-om 7om
		#183 Pelog #2	= Ryo9: 3om 4om 4+ 6om 7-om 7
		#187 Semi. #2	= Ryo9: 3om 4om 4+ 7-om 7om
		#188 Jap. P.#2	= Ryo9: 3om 5om 6om 7- 7om
		#189 Semi. #5	= Ryo9: 3om 4 4+om 6om 7-om 7
		#191 Pent. #4	= Ryo9: 3om 4 4+om 6om 7- 7om
		#192 Pent. #1	= Ryo9: 3om 4 4+om 7-om 7om
		#193 Jazz P.	= Ryo9: 4om 4+ 5om 6om 7- 7om
		#194 India	= Ryo9: 4om 4+om 6om 7-om 7
		#196 African	= Ryo9: 4om 4+om 6om 7- 7om
		#197 Pent. #3	= Ryo9: 4om 4+om 7-om 7om
		#198 African	= Ryo9: 4 4+om 5om 7-om 7om
6-Tone	...	#85 Polish	= Ryo 9T: 2om 4 4+om 7- 7om
		#86 Ion. 6-T	= Ryo 9T: 3om 4 4+om 7-om 7
		#89 Ovrtn 6T	= Ryo 9T: 3om 4om 4+ 7- 7om
		#95 Appalch.	= Ryo 9T: 3om 4 4+om 7- 7om
		#96 Scotch	= Ryo 9T: 4om 4+om 7-om 7
		#98 Prometh.	= Ryo 9T: 4om 4+ 5om 7- 7om
		#99 Lyd. 6-T	= Ryo 9T: 4om 4+ 7-om 7om
		#100 Scotch	= Ryo 9T: 4om 4+om 7- 7om
		#102 Mixo 6-T	= Ryo 9T: 4 4+om 6om 7- 7om
		#103 Guido's	= Ryo 9T: 4 4+om 7-om 7om
7-Tone	...	#1 Major	= Ryo 9-Tn: 4 4+om 7-om 7
		#51 Lydian	= Ryo 9-Tn: 4om 4+ 7-om 7
		#55 Overtone	= Ryo 9-Tn: 4om 4+ 7om 7-
		#58 Zenkla	= Ryo 9-Tn: 5om 7- 7om
		#62 Mixolyd.	= Ryo 9-Tn: 4 4+om 7- 7om
8-Tone	...	#131 Ryo 8-T	= Ryo 9-Tn: 7-omit 7
		#133 Hindu	= Ryo 9-Tn: 7- 7omit
		#136 Mixo 8-T	= Ryo 9-Tn: 4 4+omit

NOTE: The order of "Ethnic Uses" & "Source" is different, being on the previous page for this scale, rather than the usual place.

#148 Major low 6 7, high 3- 6- 7- TUDOR SCALE

9-Tones

Intervals: $1-\frac{1}{2}$ - $1-\frac{1}{2}-1$ - $1-$ $\frac{1}{2}-1-1$

Formula: $1-\frac{1}{2}$ - m - $1-$ mN

Alternate Symbols:

#1 MAJOR low 6 7, high 3- 6- 7-

#49 Natural minor: low 6+ 7+, high 6 7

Ethnic Uses:

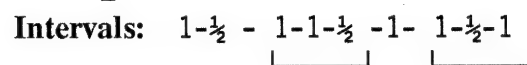
England during 16th century

NOTE: 1. More than an octave; $7\frac{1}{2}$ steps

2. This is simply the Natural minor Scale with "leading tones" before the octave.

Source:

Lloyd, page 71



#1 MAJOR low 6 7, high 7-
#62 Mixolydian low 7+, high 7

Greece (Ancient)
India (Hindu)
Jewish (for prayers)

2. Might appear to be #49 Natural minor Scale with $\frac{1}{2}$ -1 added at the top, but it isn't. It is #62 Mixolydian with leading tones.

Colin, page 310

End of 9-Tone Scales
Continue for 10-Tone Scales

THE GRAND FINALE: Part 5

10-TONE SCALES

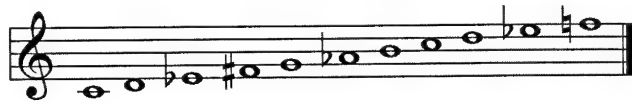
This fifth part of The Grand Finale contains the following 10-Tone Scales (3 Scales):

- #150 Algerian
 - #151 Armenian, Ancient Church
 - #152 Russian Liturgical
-
-

#150 Major 3- 4+ 6- 9 10- 11

ALGERIAN

10-Tones



Intervals: $1-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-1$

Formula: (8) $-\frac{1}{2}-$ mH - m

Alternate Symbols:

#1 MAJOR 3- 4+ 6- 9 10- 11

#40 Hungarian minor 9 10 11-

#40 Hungarian minor + a minor tetrachord

Ethnic Uses:

Algeria

NOTE: More than an octave; $8\frac{1}{2}$ steps**Source:**

Colin, page 307

#151 Major 3- 5- 7- 8- 9- 10- 11

ARMENIAN, Ancient Church

10 Tones



Intervals: $1-\frac{1}{2}-1$ $-\frac{1}{2}-$ $1\frac{1}{2}-\frac{1}{2}-\frac{1}{2}$ $-$ $1-1-1$

Formula: m $-\frac{1}{2}-$ (13) $-$ W

Ethnic Uses:

Ancient Armenian Church

NOTE: More than an octave; $8\frac{1}{2}$ steps

#152 Major 7- 9 10- 11

RUSSIAN, Liturgical

10-Tones



Intervals: 1-1- $\frac{1}{2}$ -1- 1- $\frac{1}{2}$ -1 - 1- $\frac{1}{2}$ -1

Formula: M -1- m - m

Alternate Symbols:

#1 MAJOR 7- 9 10- 11

#62 Mixolydian 9 10- 11

#62 Mixolydian plus a minor tetrachord

Ethnic Uses:

Russia (Liturgical)

NOTE: More than an octave; $8\frac{1}{2}$ steps

End of 10-Tone Scales
Continue for 5-Tone Scales

THE GRAND FINALE: Part 6

5-TONE SCALES

This (sixth) part of The Grand Finale contains the following 5-Tone Scales (46 scales):

#153	Semitonal Pentatonic #4	#176	Dominant Pentatonic
#154	Japanese	#177	Scriabin
#155	Pelog #1	#178	Hirajoshi #3
#156	Pelog #4	#179	Pelog #3
#157	Hirajoshi #2	#180	Pelog #5
#158	Pentatonic #5	#181	Semitonal Pentatonic #3
#159	Kumoi #5	#182	Bulgarian
#160	Javanese	#183	Pelog #2
#161	Semitonal Pentatonic #1	#184	Hirajoshi #1
#162	Hirajoshi #4	#185	African
#163	Kumoi #2	#186	Kumoi #1
#164	Pentatonic #2	#187	Semitonal Pentatonic #2
#165	Japanese Pentatonic #4	#188	Japanese Pentatonic #2
#166	Jazz minor Pentatonic	#189	Semitonal Pentatonic #5
#167	Kumoi #3	#190	Kumoi #4
#168	Japanese Pentatonic #5	#191	Pentatonic #4
#169	Diminished Pentatonic	#192	Pentatonic #1
#170	Jazz Dominant Pentatonic	#193	Jazz Pentatonic
#171	Japanese Pentatonic #3	#194	India
#172	Vibhasa	#195	Japanese Pentatonic #1
#173	Hirajoshi #5	#196	African
#174	Pentatonic-Dominant	#197	Pentatonic #3
#175	Rewa	#198	African

#153 Major 2- 3- 4+ 5omit 6- 7omit SEMITONAL PENTATONIC #4**5-Tones**

Intervals: $\frac{1}{2}$ -1-1 $\frac{1}{2}$ - 1-2

Formula: (4) - (x-8)

Modal Series Scale Point Tone: MS 5-II:4

Backward: #167 Kumoi #3

Backward MS:SPT: MS 5-I:3

C D \flat E \flat F \sharp A \flat c
 *D \flat D E G A d \flat
 D E \flat F A \flat B \flat d
 E \flat E G \flat A B e \flat
 *E F G B \flat C e
 F G \flat A \flat B D \flat f
 *F \sharp G A C D f \sharp
 G A \flat B \flat D \flat E \flat g
 *A \flat A B D E a \flat
 A B \flat C E \flat F a
 B \flat B D \flat E G \flat b \flat
 **B C D F G b

Alternate Symbols:

#1 MAJOR 2- 3- 4+ 5omit 6- 7omit
 #1 Major 2- 3- 4omit 5- 6- 7omit
 #1 Major 2- 3- 4+ 5+ 6omit 7omit
 #1 Major 4omit 7omit 2- 3- 5- 6-
 #1 Major 5omit 7omit 2- 3- 4+ 6-
 #1 Major 6omit 7omit 2- 3- 4+ 5+
 #8 Super-Locrian 4omit 7omit
 #10 Raga Todi 5omit 7omit
 #12 Locrian 4omit 7omit

Altered:

6-Tone ... #67 Vilasakhani = Semi #4: 7
 #68 Locrian 6-Tone = Semi #4: 7-
 7-Tone ... #8 Super-Locrian = Semi #4: 3 3+ 7-
 #10 Raga Todi = Semi #4: 5 7
 #12 Locrian = Semi #4: 4- 4 7-
 8-Tone ... #105 Locrian 8-T #1 = Semi #4: 2 2+ 4- 4 7-
 #110 Espla's = Semi #4: 3 3+ 4- 4 7-
 #114 Locrian 8-T #2 = Semi #4: 4- 4 5 7-
 #116 'Iraq = Semi #4: 4- 4 7- 7
 9-Tone ... #138 Locrian 9-Tone = Semi#4: 2 2+ 4- 4 5 7-

Ethnic Uses: ---

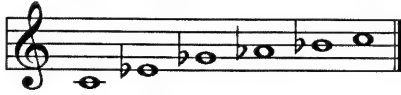
*Uses only white piano keys except for one note

**Uses only white piano keys

#154 Major 2omit 3- 4omit 5- 6- 7-

JAPANESE

5-Tones



Intervals: $1\frac{1}{2}$ - $1\frac{1}{2}$ -1 - 1-1

Formula: (19) - (x-6)

Modal Series Scale Point Tone: MS 5-VII:1

Backward: --- [Major 4+ 5om 7om; W - (x-11)]

Backward MS:SPT: MS 5-VII:3

Alternate Symbols:

- #1 Major 2omit 3- 4+ 5omit 6- 7-
- #1 Major 2+ 3omit 4+ 5omit 6- 7-
- #1 Major 2+ 3omit 4omit 5- 6- 7-
- #1 MAJOR 2omit 3- 4omit 5- 6- 7-
- #1 Major 2omit 4omit 3- 5- 6- 7-
- #1 Major 2omit 5omit 3- 4+ 6- 7-
- #1 Major 3omit 4omit 2+ 5- 6- 7-
- #1 Major 3omit 5omit 2+ 4+ 6- 7-
- #8 Super-Locrian 2omit 4omit
- #12 Locrian 2omit 4omit
- #42 Greek 2omit 5omit
- #45 Half-Diminished 2omit 4omit

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|----------------------|
| 6-Tone | ... | #68 | Locrian 6-Tone | = | Japanese 2- |
| 7-Tone | ... | #8 | Super-Locrian | = | Japanese 2- 4- |
| | | #12 | Locrian | = | Japanese 2- 4 |
| | | #42 | Greek | = | Japanese 2 5 5+ |
| | | #45 | Half-Diminished | = | Japanese 2 4 |
| 8-Tone | ... | #105 | Locrian 8-T #1 | = | Japanese 2- 2 4 |
| | | #110 | Espla's | = | Japanese 2- 3 3+ 4 |
| | | #114 | Locrian 8-T #2 | = | Japanese 2- 4 5 5+ |
| | | #116 | 'Iraq | = | Japanese 2- 4 7 7+ |
| 9-Tone | ... | #138 | Locrian 9-Tone | = | Japanese 2- 2 4 5 5+ |

(cont'd)

#154 Major 2om 3- 4om 5- 6- 7- (cont'd)

JAPANESE (cont'd)

5-Tones

Ethnic Uses:

American Indians (Northern)

Black Africa

Japan

Source:

Harvard Dictionary of Music, page 20

C	E \flat	G \flat	A \flat	B \flat	c
*D \flat	E	G	A	B	d \flat
D	F	G \sharp	A \sharp	C	d
E \flat	G \flat	A	B	D \flat	e \flat
*E	G	B \flat	C	D	e
F	A \flat	B	D \flat	E \flat	f
*G \flat	A	C	D	E	g \flat
G	B \flat	D \flat	E \flat	F	g
A \flat	B	D	E	F \sharp	a \flat
*A	C	E \flat	F	G	a
B \flat	D \flat	E	G \flat	A \flat	b \flat
**B	D	F	G	A	b

*Uses only white piano keys except for one note

**Uses only white piano keys

#155 Major 2- 3- 4omit 6- 7omit

PELOG #1 (Javanese)

5-Tones



Intervals: $\frac{1}{2}$ -1-2 - $\frac{1}{2}$ -2

Formula: (b) - (x-4)

Modal Series Scale Point Tone: MS 5-IV:1

Backward: #178 Hirajoshi #3

Backward MS:SPT: MS 5-III:3

Alternate Symbols:

- #1 MAJOR 2- 3- 4omit 6- 7omit
- #1 Major 4omit 7omit 2- 3- 6-
- #10 Raga Todi 4omit 7omit
- #11 Byzantine 4omit 7omit
- #14 Neapolitan-minor 4omit 7omit
- #15 Phrygian 4omit 7omit

Alternate Names:

Balinese
PELOG #1
Pelog Mode 1

Altered:

7-Tone ...	#10 Raga Todi	=	Pelog #1: 4+ 7
	#11 Byzantine	=	Pelog #1: 4- 7-
	#14 Neapolitn-min.	=	Pelog #1: 4 7
	#15 Phrygian	=	Pelog #1: 4 7-
8-Tone ...	#106 Phrygian 8-#1	=	Pelog #1: 2 2+ 4 7-
	#111 Spanish 8-Tn	=	Pelog #1: 3 3+ 4 7-
	#114 Locrian 8-#2	=	Pelog #1: 4 5- 5 7-
	#117 Phrygian 8-#2	=	Pelog #1: 4 6 6+ 7-
9-Tone ...	#137 Tcherepnin	=	Pelog #1: 3 3+ 4 6 6+ 7
	#138 Locrian 9-Tn	=	Pelog #1: 2 2+ 4 5 5+7-
	#139 Phrygian 9-Tn	=	Pelog #1: 2 2+ 4 6 6+ 7-

(cont'd)

#155 Major 2- 3- 4om 6- 7om (cont'd)	PELOG #1 (cont'd)	5-Tones
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Ethnic Uses:

Bali
 India (Hindu)
 Japan
 Java

Source:

Colin, page 307

C	D \flat	E \flat	G	A \flat	c
D \flat	D	E	G \sharp	A	d \flat
D	E \flat	F	A	B \flat	d
E \flat	E	F \sharp	A \sharp	B	e \flat
**E	F	G	B	C	e
F	G \flat	A \flat	C	D \flat	f
F \sharp	G	A	C \sharp	D	f \sharp
G	A \flat	B \flat	D	E \flat	g
A \flat	A	B	D \sharp	E	a \flat
*A	B \flat	C	E	F	a
B \flat	B	D \flat	F	G \flat	b \flat
*B	C	D	F \sharp	G	b

*Uses only white piano keys except for one note

**Uses only white piano keys

#156 Major 2- 3omit 5- 6- 7omit

PELOG #4

5-Tones



Intervals: $\frac{1}{2}$ -2- $\frac{1}{2}$ - 1-2

Formula: (d) - (x-8)

Modal Series Scale Point Tone: MS 5-IV:4

Backward: #173 Hirajoshi #5

Backward MS:SPT: MS 5-III:5

Alternate Symbols:

#1 MAJOR 2- 3omit 5-6- 7omit

#1 Major 3omit 7omit 2- 5- 6-

#12 Locrian 3omit 7omit

#26 Persian 3omit 7omit

#27 Rahawi 3omit 7omit

Alternate Names:

PELOG #4

Pelog Mode 4

Altered:

6-Tone ...	#71 Abuselik	=	Pelog #4: 7-
7-Tone ...	#12 Locrian	=	Pelog #4: 3- 7-
	#26 Persian	=	Pelog #4: 3 7
	#27 Rahawi	=	Pelog #4: 3 7-
8-Tone ...	#105 Locrian 8-T #1	=	Pelog #4: 2 2+ 3- 7-
	#110 Espla's	=	Pelog #4: 3- 3 7-
	#114 Locrian 8-T #2	=	Pelog #4: 3- 5 5+ 7-
	#116 'Iraq	=	Pelog #4: 3-7- 7
	#120 Irak	=	Pelog #4: 3 6 6+ 7
9-Tone ...	#138 Locrian 9-Tn	=	Pelog #4: 2 2+ 3- 5 5+ 7-

(cont'd)

#156 Major 2- 3om 5- 6- 7om (cont'd) PELOG #4 (cont'd)

5-Tones

Ethnic Uses:

Japan

Source:

Persichetti, page 50

C	D \flat	F	G \flat	A \flat	c
D \flat	D	F \sharp	G	A	d \flat
D	E \flat	G	A \flat	B \flat	d
E \flat	E	G \sharp	A	B	e \flat
*E	F	A	B \flat	C	e
F	G \flat	A \sharp	B	D \flat	f
*F \sharp	G	B	C	D	f \sharp
G	A \flat	C	D \flat	E \flat	g
A \flat	A	C \sharp	D	E	a \flat
A	B \flat	D	E \flat	F	a
B \flat	B	D \sharp	E	G \flat	b \flat
**B	C	E	F	G	b

*Uses only white piano keys except for one note

**Uses only white piano keys

#157 Major 2- 3omit 5- 6omit 7-

HIRAJOSHI #2 (Japanese)

5-Tones



Intervals: $\frac{1}{2}$ -2- $\frac{1}{2}$ - 2-1

Formula: (d) - (x-14)

Modal Series Scale Point Tone: MS 5-III:2

Backward: #183 Pelog #2

Backward MS:SPT: MS 5-IV:2

Alternate Symbols:

C D \flat F G \flat B \flat c
 D \flat D F \sharp G B d \flat
 D E \flat G A \flat C d
 E \flat E G \sharp A D \flat e \flat
 *E F A B \flat D e
 F G \flat A \sharp B E \flat f
 *F \sharp G B C E f \sharp
 G A \flat C D \flat F g
 A \flat A C \sharp D G \flat a \flat
 A B \flat D E \flat G a
 B \flat B D \sharp E A \flat b \flat
 **B C E F A b

#1 MAJOR 2- 3omit 5- 6omit 7-
 #1 Major 2- 3omit 5- 6+ 7omit
 #1 Major 3omit 6omit 2- 5- 7-
 #1 Major 3omit 7omit 2- 5- 6+
 #12 Locrian 3omit 6omit
 #13 Hijazi 3omit 6omit
 #27 Rahawi 3omit 6omit
 #28 Oriental 3omit 6omit

Alternate Names:

HIRAJOSHI #2
 Iwato (Japan)

Altered:

6-Tone ... #71 Abuselik = Hirajoshi #2: 6-
 7-Tone ... #12 Locrian = Hirajoshi #2: 3- 6-
 #13 Hijazi = Hirajoshi #2: 3- 6
 #27 Rahawi = Hirajoshi #2: 3 6-
 #28 Oriental = Hirajoshi #2: 3 6
 8-Tone ... #105 Locrian 8-Tn #1 = Hira. #2: 2 2+ 3- 6-
 #110 Espla's = Hira. #2: 3- 3 6-
 #114 Locrian 8-Tn #2 = Hira. #2: 3- 5 5+ 6-
 #116 'Iraq = Hira. #2: 3- 6- 7 7+
 9-Tone ... #138 Locrian 9-Tone = Hir#2: 2 2+ 3- 5 5+ 6-

Ethnic Uses:

Japan

*Uses only white piano

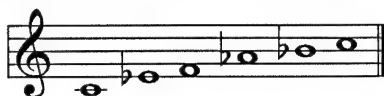
keys except for one note

**Uses only white piano keys

Source:

Slonimsky, page 162

#158 Major 2omit 3- 5omit 6- 7- PENTATONIC #5

5-Tones

Intervals: $1\frac{1}{2}$ -1- $1\frac{1}{2}$ - 1-1

Formula: (17) - (x-6)

Modal Series Scale Point Tone: MS 5-V:5

Backward: #197 Pentatonic #3

Backward MS:SPT: MS 5-V:3

Alternate Symbols:

- #1 MAJOR 2omit 3- 5omit 6- 7-
- #1 Major 2+ 3omit 5+ 6omit 7-
- #1 Major 2+ 3omit 5+ 6+ 7omit
- #1 Major 2omit 3- 5+ 6+ 7omit
- #1 Major 2omit 5omit 3- 6- 7-
- #1 Major 2omit 7omit 3- 5+ 6+
- #1 Major 3omit 6omit 2+ 5+ 7-
- #1 Major 3omit 7omit 2+ 5+ 6+
- #12 Locrian 2omit 5omit
- #15 Phrygian 2omit 5omit
- #25 Chromatic Phrygian 3omit 7omit
- #29 Persian 3omit 6omit
- #45 Half-Diminished 2omit 5omit
- #49 Natural minor 2omit 5omit

Alternate Names:

- A Mode, Pentatonic
 - A# Mode, Pentatonic
 - Bb Mode, Pentatonic
 - A Pentatonic
 - A# Pentatonic
 - Bb Pentatonic
 - Banshiki, Ryosen (Japan)
 - Chiao, Kung #3 (China)
-

(cont'd)

Alternate Names (cont'd):

Japanese Names:

Banshiki, Ryosen

Kaku Mode, Ryo Scale

Ryo Scale #2

Sojo, Ritsusen

Jazz Pentatonic

Jazz Scale

Kaku, Ryo #2

Kung #3, Chiao Mode (China)

Minor Pentatonic

Mode #5, Pentatonic

PENTATONIC #5

Pentatonic A Mode

Pentatonic A# Mode

Pentatonic Bb Mode

Pentatonic Mode 5

Pentatonic-minor

Ryo Scale #2 (Japan)

Ryo Scale #2, Kaku Mode (Japan)

Slendro, Manyura Mode (Java)

Sojo, Ritsusen (Japan)

Tonal Pentatonic #5

Altered:

6-Tone ...	#72 Phrygian 6-Tn	=	Pent. #5: 2-
	#75 Irish	=	Pent. #5: 5
	#90 Aeolian 6-Tn	=	Pent. #5: 2
7-Tone ...	#12 Locrian	=	Pent. #5: 2- 5-
	#15 Phrygian	=	Pent. #5: 2- 5
	#25 Chrm. Phrygian	=	Pent. #5: 3 3+ 7 7+
	#29 Persian	=	Pent. #5: 3 3+ 6 6+
	#45 Half-Diminished	=	Pent. #5: 2 5-
8-Tone ...	#49 Natural minor	=	Pent. #5: 2 5
	#105 Locrian 8-Tn #1	=	Pent. #5: 2- 2 5-
	#106 Phrygian 8-#1	=	Pent. #5: 2- 2 5
	#110 Espla's	=	Pent. #5: 2- 3 3+ 5-

(cont'd)

#158 Major 2om 3- 5om 6- 7- (cont'd)	PENTATONIC #5 (cont'd)	5-Tones
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Altered (cont'd):

8-Tone (cont'd) ...	#111 Spanish 8-Tone =	Pent. #5: 2- 3 3+ 5
	#114 Locrian 8-T #2 =	Pent. #5: 2- 5- 5
	#116 'Iraq =	Pent. #5: 2- 5- 7 7+
	#117 Phrygian 8-#2 =	Pent. #5: 2- 5 6 6+
	#122 Aeolian 8-T #1 =	Pent. #5: 2 3 3+ 5
	#128 Aeolian 8-T #2 =	Pent. #5: 2 5 6 6+
	#129 Isfahan =	Pent. #5: 2 5 7 7+
	#135 Magon Abot =	Pent. #5: low 7+, high 2 5
	9-Tone ...	#138 Locrian 9-Tone = Pent. #5: 2- 2 5- 5
		#139 Phrygian 9-Tn = Pent. #5: 2- 2 5 6 6+
		#144 Aeolian 9-Tone = Pent#5: 2 3 3+ 5 6 6+

Ethnic Uses:

American Indians (North America)
 Appalachian Mts., Southern (USA)
 China
 India (Hindu)
 Japan
 Java
 Scotland

Source:

Vincent, page 169

C	E \flat	F	A \flat	B \flat	c
D \flat	E	G \flat	A	B	d \flat
*D	F	G	B \flat	C	d
	E \flat	G \flat	A \flat	B	D \flat e \flat
**E	G	A	C	D	e
	F	A \flat	B \flat	D \flat	E \flat f
*F \sharp	A	B	D	E	f \sharp
	G	B \flat	C	E \flat	F g
	A \flat	B	D \flat	E	G \flat a \flat
**A	C	D	F	G	a
***B \flat	D \flat	E \flat	G \flat	A \flat	b \flat
**B	D	E	G	A	b

*Uses only white piano keys except for one note

**Uses only white piano keys

***Uses only (and all) black piano keys

#159 Major 2omit 3- 5- 6omit 7- KUMOI #5 (Japanese)

5-Tones



Intervals: $1\frac{1}{2}$ - $1-\frac{1}{2}$ - 2-1

Formula: (15) - (x-14)

Modal Series Scale Point Tone: MS 5-I:5

Backward: #187 Semitonal Pentatonic #2

Backward MS:SPT: MS 5-II:2

Alternate Symbols:

- #1 Major 2+ 3omit 5- 6omit 7-
- #1 Major 2+ 3omit 5- 6+ 7omit
- #1 Major 2omit 3- 5- 6+ 7omit
- #1 MAJOR 2omit 3- 5- 6omit 7-
- #1 Major 2omit 6omit 3- 5- 7-
- #1 Major 2omit 7omit 3- 5- 6+
- #1 Major 3omit 6omit 2+ 5- 7-
- #1 Major 3omit 7omit 2+ 5- 6+
- #12 Locrian 2omit 6omit
- #13 Hijazi 2omit 6omit
- #18 Blues 3omit 5omit
- #45 Half-Diminished 2omit 6omit
- #46 Zangula 2omit 6omit

Alternate Names:

Jazz Pentatonic
Jazz Scale
KUMOI #5

Altered:

- | | | | |
|------------|---------------------|---|---------------------|
| 6-Tone ... | #66 Blues | = | Kumoi #5: 5 5+ |
| 7-Tone ... | #12 Locrian | = | Kumoi #5: 2- 6- |
| | #13 Hijazi | = | Kumoi #5: 2- 6 |
| | #18 Blues | = | Kumoi #5: 3 3+ 5 5+ |
| | #45 Half-Diminished | = | Kumoi #5: 2 6- |
| | #46 Zangula | = | Kumoi #5: 2 6 |

(cont'd)

#159 Major 2om 3- 5- 6om 7- (cont'd) KUMOI #5 (cont'd) 5-Tones

Altered (cont'd):

8-Tone ... #105 Locrian 8-T #1 = Kumoi #5: 2- 2 6-
 #110 Espla's = Kumoi #5: 2- 3 3+ 6-
 #114 Locrian 8-T #2 = Kumoi #5: 2- 5 5+ 6-
 #116 'Iraq = Kumoi #5: 2- 6- 7 7+
 9-Tone ... #138 Locrian 9-Tone = Kumoi#5: 2- 2 5 5+ 6-

Ethnic Uses:

Japan

Source:

Persichetti, page 50

C	E \flat	F	G \flat	B \flat	c
D \flat	E	F \sharp	G	B	d \flat
*D	F	G	A \flat	C	d
E \flat	F \sharp	G \sharp	A	D \flat	e \flat
*E	G	A	B \flat	D	e
F	G \sharp	A \sharp	B	D \sharp	f
*F \sharp	A	B	C	E	f \sharp
G	B \flat	C	D \flat	F	g
A \flat	B	C \sharp	D	G \flat	a \flat
*A	C	D	E \flat	G	a
B \flat	C \sharp	D \sharp	E	A \flat	b \flat
**B	D	E	F	A	b

*Uses only white piano keys except for one note

**Uses only white piano keys

#160 Major 2- 3- 5omit 6- 7omit

JAVANESE

5-Tones



Intervals: $\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -2

Formula: mN - (x-12)

Modal Series Scale Point Tone: MS 5-VIII:2

Backward: --- [Major 2omit 4omit]
[(dd)-(x-5)]

Backward MS:SPT: MS 5-IX:3

Alternate Symbols:

- #1 MAJOR 2- 3- 5omit 6- 7omit
- #1 Major 5omit 7omit 2- 3- 6-
- #12 Locrian 5omit 7omit
- #14 Neapolitan-min 5omit 7omit
- #15 Phrygian 5omit 7omit

Alternate Names:

JAVANESE
Javanese Pelog

Altered:

6-Tone	...	#70	Gurjari	=	Java 7
		#72	Phrygian 6-Tn	=	Java 7-
		#74	Samanta	=	Java 5
7-Tone	...	#12	Locrian	=	Java 5- 7-
		#14	Neapolitan-min.	=	Java 5 7
		#15	Phrygian	=	Java 5 7-
8-Tone	...	#105	Locrian 8-T #1	=	Java 2 2+ 5- 7-
		#106	Phrygian 8T #1	=	Java 2 2+ 5 7-
		#110	Espla's	=	Java 3 3+ 5- 7-
		#111	Spanish 8-Tone	=	Java 3 3+ 5 7-
		#114	Locrian 8-T #2	=	Java 5- 5 7-
		#115	Zirafkand	=	Java 5- 6 6+ 7-
		#116	Iraq	=	Java 5- 7- 7
		#117	Phrygian 8T #2	=	Java 5 6 6+ 7-

(cont'd)

#160	Major 2- 3- 5om 6- 7om (cont'd)	Javanese (cont'd)	5-Tones
------	---------------------------------	-------------------	---------

Altered (cont'd):

9-Tone ... #138 Locrian 8-Tone = Java 2 2+ 5- 5 7-
 #139 Phrygian 9-Tn = Java 2 2+ 5 6 6+ 7-

Ethnic:

Java

Source:

Cipriani, page 40

C	D \flat	E \flat	F	A \flat	c
D \flat	D	E	G \flat	A	d \flat
D	E \flat	F	G	B \flat	d
E \flat	E	G \flat	A \flat	B	e \flat
**E	F	G	A	C	e
F	G \flat	A \flat	B \flat	D \flat	f
*G \flat	G	A	B	D	g \flat
G	A \flat	B \flat	C	E \flat	g
A \flat	A	B	D \flat	E	a \flat
*A	B \flat	C	D	F	a
B \flat	B	D \flat	E \flat	G \flat	b \flat
**B	C	D	E	G	b

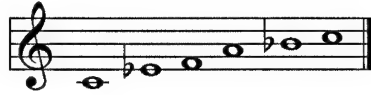
*Use only white piano keys except for one note.

**Uses only white piano keys

#161 Major 2omit 3- 5omit 7-

SEMITONAL PENTATONIC #1

5-Tones



Intervals: $1\frac{1}{2}$ -1-2 - $\frac{1}{2}$ -1

Formula: (q) - (x-2)

Modal Series Scale Point Tone: MS 5-II:1

Backward: #186 Kumoi #1

Backward MS:SPT: MS 5-I:1

Alternate Symbols:

- #1 Major 2+ 3omit 5omit 7-
- #1 MAJOR 2omit 3- 5omit 7-
- #1 Major 2omit 5omit 3- 7-
- #1 Major 3omit 5omit 2+ 7-
- #13 Hijazi 2omit 5omit
- #16 Javanese 2omit 5omit
- #29 Persia 3omit 5omit
- #32 Roumanian-Major 3omit 5omit
- #46 Zangula 2omit 5omit
- #50 Dorian 2omit 5omit

Altered:

- | | | | | | |
|--------|-----|------|----------------|---|---------------------|
| 6-Tone | ... | #77 | Dorian 6-Tone | = | Semi. #1: 5 |
| 7-Tone | ... | #13 | Hijazi | = | Semi. #1: 2- 5- |
| | | #16 | Javanese | = | Semi. #1: 2- 5 |
| | | #29 | Persian | = | Semi. #1: 3 3+ 5+ |
| | | #32 | Roumanian-Maj. | = | Semi. #1: 3 3+ 5 |
| | | #46 | Zangula | = | Semi. #1: 2 5- |
| | | #50 | Dorian | = | Semi. #1: 2 5 |
| 8-Tone | ... | #112 | Latin American | = | Semi. #1: 2- 3 3+ 5 |
| | | #117 | Phrygian 8-#2 | = | Semi. #1: 2- 5 6- 6 |
| | | #123 | Dorian 8-#1 | = | Semi. #1: 2 3 3+ 5 |
| | | #128 | Aeolian 8-#2 | = | Semi. #1: 2 5 6- 6 |
| | | #130 | Dorian 8-Tn #2 | = | Semi. #1: 2 5 7 7+ |

(cont'd)

#161 Major 2om 3- 5om 7- (cont'd) SEMITONAL PENT. #1 (cont'd) 5-Tones

Altered (cont'd):

9-Tone	...	#139	Phrygian 9-Tn	=	Semi. #1: 2- 2 5 5+
		#144	Aeolian 9-Tone	=	Semi#1: 2 3 3+ 5 6- 6
		#145	Dorian 9-Tone	=	Semi #1: 2 3 3+ 5 7 7+
		#146	Armenian	=	Semi #1: 2 5 9- 10-

Ethnic Uses:

India (Hindu)

Source:

Danielou #2, page 315

C E \flat F A B \flat c
 D \flat E F \sharp A \sharp B d \flat
 **D F G B C d
 E \flat G \flat A \flat C D \flat e \flat
 *E G A C \sharp D e
 F A \flat B \flat D E \flat f
 F \sharp A B D \sharp E f \sharp
 *G B \flat C E F g
 A \flat B D \flat F G \flat a \flat
 *A C D F \sharp G a
 B \flat D \flat E \flat G A \flat b \flat
 *B D E G \sharp A b

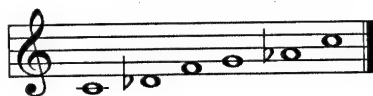
*Uses only white piano keys except for one note

**Uses only white piano keys

#162 Major 2- 3omit 6- 7omit

HIRAJOSHI #4 (Japanese)

5-Tones



Intervals: $\frac{1}{2}$ -2-1 - $\frac{1}{2}$ -2

Formula: (e) - (x-4)

Modal Series Scale Point Tone: MS 5-III:4

Backward: #180 Pelog #5

Backward MS:SPT: MS 5-IV:5

Alternate Symbols:

- #1 MAJOR 2- 3omit 6- 7omit
- #1 Major 3omit 7omit 2- 6-
- #4 Chromatic Dorian 2- 2omit 6- 6omit
- #14 Neapolitan-minor 3omit 7omit
- #15 Phrygian 3omit 7omit
- #30 Double Harmonic 3omit 7omit
- #31 Spanish 3omit 7omit

Alternate Names:

Hirajoshi (Starting on E) (Japan)
 HIRAJOSHI #4
 In Scale, Desc.-Inv. (on D) (Japan)
 Japanese
 Kumojoshi (on A)
 Nakazajoshi (on B)
 Taksago (on A)
 Tanabe's Soft Scale, Descending-Inverted

Altered:

6-Tone	...	#73	In Scale	=	Hirajoshi #4: 7-
		#74	Samanta	=	Hirajoshi #4: 3-
		#83	Bangala	=	Hirajoshi #4: 3
7-Tone	...	#4	Chrm. Dorian	=	Hira. #4: 2 2+ 6 6+
		#14	Neapolitan-min.	=	Hirajoshi #4: 3- 7
		#15	Phrygian	=	Hirajoshi #4: 3- 7-
		#30	Dbl. Harmonic	=	Hirajoshi #4: 3 7
		#31	Spanish	=	Hirajoshi #4: 3 7-

(cont'd)

#162 Major 2- 3om 6- 7om (cont'd)

HIRAJOSHI #4 (cont'd)

5-Tones

Altered (cont'd):

8-Tone	...	#106	Phrygian 8-#1	=	Hira. #4: 2 2+ 3- 7-
		#111	Spanish 8-Tone	=	Hira. #4: 3- 3 7-
		#114	Locrian 8-Tn #2	=	Hira. #4: 3- 5- 5 7-
		#117	Phrygian 8-#2	=	Hira. #4: 3- 6 6+ 7-
9-Tone	...	#137	Tcherepnin	=	Hr #4: 2 2+ 3 6 6+ 7
		#138	Locrian 9-Tone	=	Hr #4: 2 2+ 3- 5- 5 7-
		#139	Phrygian 9-Tn	=	Hr #4: 2 2+ 3- 6 6+ 7-

Ethnic Uses:

Ancient Greece

Japan, general

Japan (Koto tuning)

Source:

Wade, page 181

C D \flat F G A \flat c
 D \flat D F \sharp G \sharp A d \flat
 D E \flat G A B \flat d
 E \flat E G \sharp A \sharp B e \flat
 **E F A B C e
 F G \flat B \flat C D \flat f
 F \sharp G B C \sharp D f \sharp
 G A \flat C D E \flat g
 A \flat A C \sharp D \sharp E a \flat
 *A B \flat D E F a
 B \flat B E \flat F G \flat b \flat
 *B C E F \sharp G b

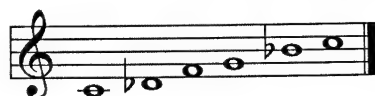
*Uses only white piano keys except for one note

**Uses only white piano keys

#163 Major 2- 3omit 6omit 7-

KUMOI #2 (Japanese)

5-Tones



Intervals: $\frac{1}{2}$ -2-1 - $1\frac{1}{2}$ -1

Formula: (e) - (x-10)

Modal Series Scale Point Tone: MS 5-I:2

Backward: #189 Semitonal Pentatonic #5

Backward MS:SPT: MS 5-II:5

Alternate Symbols:

- #1 Major 2- 3omit 6+ 7omit
- #1 MAJOR 2- 3omit 6omit 7-
- #1 Major 3omit 6omit 2- 7-
- #1 Major 3omit 7omit 2- 6+
- #15 Phrygian 3omit 6omit
- #16 Javanese 3omit 6omit
- #31 Spanish 3omit 6omit
- #33 Arabic 3omit 6omit

Alternate Names:

In Scale, Ascending (5-Tone) (Japan)
 In-sen, Ascending (Japan)
 Kokinjoshi (on E) (Japan)
 KUMOI #2 (Japan)
 Tanabe's Soft Scale, Ascending

Altered:

6-Tone	...	#73	In Scale	=	Kumoi #2: 6-
		#84	Greek	=	Kumoi #2: 3
7-Tone	...	#15	Phrygian	=	Kumoi #2: 3- 6-
		#16	Javanese	=	Kumoi #2: 3- 6
		#31	Spanish	=	Kumoi #2: 3 6-
		#33	Arabic	=	Kumoi #2: 3 6

(cont'd)

#163 Major 2- 3om 6om 7- (cont'd)

KUMOI #2 (cont'd)

5-Tones

Altered (cont'd):

8-Tone ...	#106	Phrygian 8-#1	=	Kumoi #2: 2 2+ 3- 6-
	#111	Spanish 8-Tone	=	Kumoi #2: 3- 3 6-
	#112	Latin American	=	Kumoi #2: 3- 3 6
	#114	Locrian 8-Tn #2	=	Kumoi #2: 3- 5- 5 6-
	#117	Phrygian 8-#2	=	Kumoi #2: 3- 6- 6
9-Tone ...	#138	Locrian 9-Tone	=	Km#2: 2 2+ 3- 5- 5 6-
	#139	Phrygian 9-Tn	=	Km#2: 2 2+ 3- 6- 6

Ethnic Uses:

China

Japan

Source:

Wade, page 181

C D \flat F G B \flat c
 D \flat D G \flat A \flat B d \flat
 *D E \flat G A C d
 E \flat E A \flat B \flat D \flat e \flat
 **E F A B D e
 F G \flat B \flat C E \flat f
 F \sharp G B C \sharp E f \sharp
 *G A \flat C D F g
 A \flat A D \flat E \flat G \flat a \flat
 *A B \flat D E G a
 B \flat B E \flat F A \flat b \flat
 *B C E F \sharp A b

*Uses only white piano keys except for one note

**Uses only white piano keys

#164 Major 2omit 3- 6omit 7-

PENTATONIC #2

5-Tones



Intervals: $1\frac{1}{2}$ -1-1 - $1\frac{1}{2}$ -1

Formula: (16) - (x-10)

Modal Series Scale Point Tone: MS 5-V:2

Backward: #192 Pentatonic #1

Backward MS:SPT: MS 5-V:1

Alternate Symbols:

- #1 MAJOR 2omit 3- 6omit 7-
- #1 Major 2+ 3omit 6omit 7-
- #1 Major 2+ 3omit 6+ 7omit
- #1 Major 2omit 3- 6+ 7omit
- #1 Major 2omit 6omit 3- 7-
- #1 Major 2omit 7omit 3- 6+
- #1 Major 3omit 6omit 2+ 7-
- #1 Major 3omit 7omit 2+ 6+
- #15 Phrygian 2omit 6omit
- #16 Javanese 2omit 6omit
- #32 Roumanian-Major 3omit 6omit
- #49 Natural minor 2omit 6omit
- #50 Dorian 2omit 6omit

Alternate Names:

- Blues
- Blues Pentatonic
- D Mode, Pentatonic
- D# Mode, Pentatonic
- E \flat Mode, Pentatonic
- D Pentatonic
- D# Pentatonic
- E \flat Pentatonic
- Ichitsus, Ritsusen (Japan)

(cont'd)

Alternate Names (cont'd):

Japanese Names:

Ritsu, U Mode

Ryo Scale #4 (U Mode):

Ichitsutsu, Ritsusen

Sojo, Ryosen

Yo Scale:

on A: Ritsu Oshikicho

on B: Ritsu Banshikicho

on D: Yo

on E: Ritsu Hyojo

Jazz Pentatonic

Jazz Scale

Korean Names:

P'yongjo-Kyemyonjo (on B \flat)Ujo-Kyemyonjo (on E \flat)

Kung #5, Yu Mode (China)

Minor Pentatonic

Mode 2 (Pentatonic)

Pentatonic D Mode

Pentatonic D \sharp ModePentatonic E \flat Mode

Pentatonic-minor

Pentatonic Mode 2

P'yongjo-Kyemyonjo (on B \flat) (Korea)

Ritsu, U Mode (Japan)

Ryo Scale #4 (U Mode) (Japan):

Ichiosucho, Ritsusen

Sojo, Ryosen

Slendro, Nem Mode (Java)

Sojo, Ryosen

Tonal Pentatonic #2

U Mode, Ryo #4

Ujo-Kyemyonjo (on E \flat) (Korea)

Yo (on D)

(cont'd)

Alternate Names (cont'd):

Yo Scale (Japan):

on A: Ritsu Oshikicho

on B: Ritsu Banshikicho

on D: Yo

on E: Ritsu Hyojo

Yu Mode, Kung #5 (China)

Altered:

6-Tone	...	#66	Blues	=	Pentatonic #2: 4 4+
		#75	Irish	=	Pentatonic #2: 6-
		#92	Greek	=	Pentatonic #2: 2
7-Tone	...	#15	Phrygian	=	Pentatonic #2: 2- 6-
		#16	Javanese	=	Pentatonic #2: 2- 6
		#32	Roumanian-Maj.	=	Pentatonic #2: 2+ 6
		#49	Natural minor	=	Pentatonic #2: 2 6-
8-Tone	...	#50	Dorian	=	Pentatonic #2: 2 6
		#106	Phrygian 8-#1	=	Pentatonic #2: 2- 2 6-
		#111	Spanish 8-Tone	=	Pent. #2: 2- 3 3+ 6-
		#112	Latin American	=	Pent. #2: 2- 3 3+ 6
		#114	Locrian 8-T #2	=	Pent. #2: 2- 5- 5 6-
		#117	Phrygian 8-#2	=	Pent. #2: 2- 6- 6
		#122	Aeolian 8-T #1	=	Pent. #2: 2 3 3+ 6-
		#123	Dorian 3-Tn #1	=	Pent. #2: 2 3 3+ 6
		#128	Aeolian 8-T #2	=	Pent. #2: 2 6- 6
		#129	Isfahan	=	Pent. #2: 2 6- 7 7+
		#130	Dorian 8-Tn #2	=	Pent. #2: 2 6 7 7+
9-Tone	...	#135	Magon Abot	=	Pent. #2: low 7+, 2 6-
		#138	Locrian 9-Tone	=	Pent. #2: 2- 2 5- 5 6-
		#139	Phrygian 9-Tn	=	Pent. #2: 2- 2 6- 6
		#144	Aeolian 9-Tone	=	Pent. #2: 2 3 3+ 6- 6
		#145	Dorian 9-Tone	=	Pent #2: 2 3 3+ 6 7 7+
		#146	Armenian	=	Pent. #2: 2 6 9- 10-

(cont'd)

#164 Major 2om 3- 6om 7- (cont'd)

PENTATONIC #2 (cont'd)

5-Tones

Ethnic Uses:

American Indians (North America)
 Appalachian Mts., Southern (USA)
 Bulgaria (Central & Southern)
 China
 Egypt
 Hungary
 India (Hindu)
 Japan
 Java
 Korea
 Magyars
 Mongolia
 Scotland
 Thrace
 Transylvania
 Turkey

Used by:

Eddie Van Halen

Source:

Vincent, page 169

C E \flat F G B \flat c
 D \flat E G \flat A \flat B d \flat
 **D F G A C d
 ***E \flat G \flat A \flat B \flat D \flat e \flat
 **E G A B D e
 F A \flat B \flat C E \flat f
 F \sharp A B C \sharp E f \sharp
 *G B \flat C D F g
 A \flat B D \flat E \flat G \flat a \flat
 **A C D E G a
 B \flat D \flat E \flat F A \flat b \flat
 *B D E F \sharp A b

*Uses only white piano keys except for one note

**Uses only white piano keys

***Uses only (and all) black piano keys

#165 Major 2- 3omit 7omit

JAPANESE PENTATONIC #4

5-Tones



Intervals: $\frac{1}{2}$ -2-1 - 1-1 $\frac{1}{2}$

Formula: (e) - (x-7)

Modal Series Scale Point Tone: MS 5-VI:4

Backward: --- [Major 2om 3- 6om; (16) - (x-13)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2- 3omit 7omit
- #1 Major 3omit 7omit 2-
- #2 Ananda 3omit 7omit
- #6 Neapolitan-Major 3omit 7omit
- #16 Javanese 3omit 7omit
- #33 Arabic 3omit 7omit

Altered:

6-Tone	...	#76	African	=	Jap. Pent. #4: 3-
7-Tone	...	#2	Ananda	=	Jap. Pent. #4: 3 7
		#6	Neapoltn.-Major	=	Jap. Pent. #4: 3- 7
		#16	Javanese	=	Jap. Pent. #4: 3- 7-
		#33	Arabic	=	Jap. Pent. #4: 3 7-
8-Tone	...	#112	Latin American	=	Jap. Pent. #4: 3- 3 7-
		#117	Phrygian 8-T #2	=	J.P#4: 3- 6- 6 7-
9-Tone	...	#137	Tcherepnin	=	J.P#4: 2 2+ 3 5 5+ 7
		#139	Phrygian 9-Tn	=	J.P#4: 2 2+ 3- 6- 6 7-

(cont'd)

#165 Major 2- 3om 7om (cont'd)

JAPANESE PENTATONIC #4 (cont'd)

5-Tones

Ethnic Uses:

Japan

*C D \flat F G A c
 D \flat D G \flat A \flat B \flat d \flat
 *D E \flat G A B d
 E \flat E A \flat B \flat C e \flat
 *E F A B C \sharp e
 F G \flat B \flat C D f
 F \sharp G B C \sharp D \sharp f \sharp
 *G A \flat C D E g
 A \flat A D \flat E \flat F a \flat
 A B \flat D E F \sharp a
 B \flat B E \flat F G b \flat
 B C E F \sharp G \sharp b

*Uses only white piano keys except for one note

#166 Major 2omit 3- 7omit

JAZZ MINOR PENTATONIC

5-Tones



Intervals: $1\frac{1}{2}$ -1-1 - $1-1\frac{1}{2}$

Formula: (16) - (x-7)

Modal Series Scale Point Tone: MS 5-VII:2

Backward: #166 Jazz minor Pentatonic (Same Scl.)

Backward MS:SPT: MS 5-VII:2

Alternate Symbols:

- #1 MAJOR 2omit 3- 7omit
- #1 Major 2+ 3omit 7omit
- #1 Major 2omit 7omit 3-
- #1 Major 3omit 7omit 2+
- #6 Neapolitan-Major 2omit 7omit
- #16 Javanese 2omit 7omit
- #34 Melodic minor 2omit 7omit
- #50 Dorian 2omit 7omit

Alternate Names:

JAZZ MINOR PENTATONIC

Jazz Pentatonic

Jazz Scale used against minor 7th chord

Jazz Scale used against half-diminished chord

Minor Jazz Pentatonic

Minor Pentatonic

Altered:

6-Tone	...	#76	African	=	Jazz minor Pent: 2-
		#77	Dorian 6-Tone	=	Jazz minor Pent: 7-
		#94	Hungarian	=	Jazz minor Pent: 2
7-Tone	...	#6	Neapoltn.-Major	=	Jazz min. Pent: 2- 7
		#16	Javanese	=	Jazz min. Pent: 2- 7-
		#34	Melodic minor	=	Jazz min. Pent: 2 7
		#50	Dorian	=	Jazz min. Pent: 2 7-

(cont'd)

#166 Major 2om 3- 7om (cont'd) JAZZ MINOR PENT. (cont'd)

5-Tones

Altered (cont'd):

8-Tone	...	#112	Latin American	=	Jz mn.P: 2- 3 3+ 7-
		#117	Phrygian 8-#2	=	Jz.mn.P: 2- 6- 6 7-
		#123	Dorian 8-Tn #1	=	Jz.mn.P: 2 3 3+ 7-
		#128	Aeolian 8-T #2	=	Jz.mn.P: 2 6- 6 7-
		#130	Dorian 8-Tn #2	=	Jz.mn.P: 2- 7- 7
9-Tone	...	#139	Phrygian 9-Tn	=	Jz.mn.P: 2- 2 6- 6 7-
		#142	Auxiliary Blues	=	J.mn.P: 2 3 3+ 4 4+ 7-
		#143	Bartok's 9-Tn	=	J.mn.P: 2 3 3+ 5- 5 7
		#144	Aeolian 9-Tn	=	J.mn.P: 2 3 3+ 6- 6 7-

Ethnic Uses: ---**Source:**

Reeves, page 234

*C E \flat F G A c
 D \flat E G \flat A \flat B \flat d \flat
 **D F G A B d
 E \flat G \flat A \flat B \flat C e \flat
 *E G A B C \sharp e
 F A \flat B \flat C D f
 G \flat A B D \flat E \flat g \flat
 *G A \sharp C D E g
 A \flat B D \flat E \flat F a \flat
 A C D E F \sharp a
 B \flat D \flat E \flat F G b \flat
 B D E F \sharp A \sharp b

*Uses only white piano keys except for one note

**Uses only white piano keys

#167 Major 2omit 4+ 5omit

KUMOI #3

5-Tones



Intervals: 2-1-1½ - 1-½

Formula: (bb) - (x-5)

Modal Series Scale Point Tone: MS 5-I:3

Backward: #153 Semitonal Pentatonic #4

Backward MS:SPT: MS 5-II:4

Alternate Symbols:

- #1 MAJOR 2omit 4+ 5omit
- #1 Major 2omit 4omit 5-
- #1 Major 2omit 5omit 4+
- #17 Marava 2omit 5omit
- #23 Chromatic Lydian 2omit 4omit
- #51 Lydian 2omit 5omit
- #52 Lydian-Augmented 2omit 5omit

Altered:

7-Tone	...	#17 Marava	= Kumoi #3: 2- 5
		#23 Chrm. Lydian	= Kumoi #3: 2- 4- 4
		#51 Lydian	= Kumoi #3: 2 5
		#52 Lydian-Augmnt.	= Kumoi #3: 2 5+
8-Tone	...	#107 Hindu	= Kumoi #3: 2- 2 5
		#118 Buzurg	= Kumoi #3: 2- 4- 4 5
		#120 Arabic	= Kum#3: 2- 4- 4 6- 6
		#131 Ryo 8-Tone	= Kum#3: 2 4- 4 5
9-Tone	...	#132 Hindu	= Kum#3: 2 5 6- 6
		#140 Hindu	= Kum#3: 2- 2 4- 4 5
		#141 Hindu	= Kum#3: 2- 2 5 6- 6
		#147 Ryo 9-Tone	= Kum#3: 2 4- 4 5 7- 7

(cont'd)

#167 Major 2omit 4+ 5omit (cont'd)

KUMOI #3 (cont'd)

5-Tones

Ethnic Uses:

India (Hindu)

Japan

Source:

Persichetti, page 50

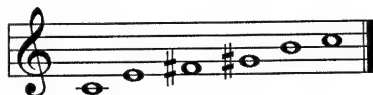
*C E F# A B c
 Db F G Bb C db
 D F# G# B C# d
 *Eb G A C D eb
 E G# A# C# D# e
 **F A B D E f
 Gb Bb C Eb F gb
 G B C# E F# g
 *Ab C D F G ab
 A C# D# F# G# a
 *Bb D E G A bb
 B D# F G# A# b

*Uses only white piano keys except for one note

**Uses only white piano keys

#168 Major 2omit 4+ 5+ 6omit JAPANESE PENTATONIC #5

5-Tones



Intervals: 2-1-1 - $1\frac{1}{2}$ - $\frac{1}{2}$

Formula: (aa) - (x-9)

Modal Series Scale Point Tone: MS 5-VI:5

Backward: --- [Major 2- 4om 5- 6- 7om; (5)-(x-8)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2omit 4+ 5+ 6omit
- #1 Major 2omit 4+ 5omit 6-
- #1 Major 2omit 4omit 5- 6-
- #1 Major 2omit 5omit 4+ 6-
- #1 Major 2omit 6omit 4+ 5+
- #19 Enigmatic 2omit 6omit
- #20 Chromatic Hypolydian 2omit 5omit
- #26 Persian 2omit 4omit
- #52 Lydian-Augmented 2omit 6omit
- #53 Leading Whole Tone 2omit 6omit

Altered:

- | | | | | |
|--------|-----|---------------------|---|-----------------------|
| 7-Tone | ... | #19 Enigmatic | = | Jap.Pent.#5: 2- 6+ |
| | | #20 Chrm. Hypolyd. | = | Jap.Pent.#5: 2- 5- 5 |
| | | #26 Persian | = | Jap.Pent.#5: 2- 4- 4 |
| | | #52 Lydian-Augmnt. | = | Jap.Pent.#5: 2 6 |
| | | #53 Leading Whl.Tn. | = | Jap.Pent.#5: 2 6+ |
| 8-Tone | ... | #120 Irak | = | Jap.P.#5: 2- 4- 4 6 |
| | | #132 Hindu | = | Jap.P.#5: 2 5- 5 6 |
| 9-Tone | ... | #141 Hindu | = | Jap.P.#5: 2- 2 5- 5 6 |

Ethnic Uses:

Japan

C	E	F#	G#	B	c
*Db	F	G	A	C	db
D	F#	G#	A#	C#	d
*Eb	G	A	B	D	eb
E	G#	A#	C	D#	e
*F	A	B	C#	E	f
Gb	Bb	C	D	F	gb
G	B	C#	D#	F#	g
*Ab	C	D	E	G	ab
A	C#	D#	F	G#	a
Bb	D	E	Gb	A	bb
B	D#	F	G	A#	b

*Uses only white piano keys except for one note

#169 Major 2+ 4omit 5- 6omit 7-

DIMINISHED PENTATONIC

5-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ -1 - 2-1

Formula: (14) - (x-14)

Modal Series Scale Point Tone: MS 5-XIII:1

Backward: --- [Major 3om 4+ 5+ 7om; (n) - (x-3)]

Backward MS:SPT: MS 5-XII:3

Alternate Symbols:

- #1 MAJOR 2+ 4omit 5- 6omit 7-
- #1 Major 2omit 3- 3 4omit 5- 6omit 7-
- #1 Major 2+ 4+ 5omit 6omit 7-
- #1 Major 2omit 4omit 6omit 3- 3 5- 7-
- #1 Major 4omit 6omit 2+ 5- 7-
- #1 Major 5omit 6omit 2+ 4+ 7-
- #18 Blues 4omit 4+ 5omit
- #22 Hungarian-Major 5omit 6omit

Alternate Names:

DIMINISHED PENTATONIC

Jazz Diminished Pentatonic

Jazz Pentatonic

Jazz Scale against Half-Diminished Chord

C D# E F# A# c
 *Db E F G B db
 D F Gb Ab C d
 Eb F# G A Db eb
 E G Ab Bb D e
 F G# A B D# f
 Gb A Bb C E gb
 G A# B C# F g
 Ab B C D Gb ab
 A C Db Eb G a
 Bb C# D E Ab bb
 *B D Eb F A b

Altered:

- | | | | | |
|--------|-----|----------------------|---|----------------------|
| 7-Tone | ... | #18 Blues | = | Dim Pent 4 5 5+ |
| | | #22 Hungarn.-Major | = | Dim Pent 5 5+ 6 |
| 8-Tone | ... | #121 Jobim's | = | Dim Pent 2- 2 5 5+ 6 |
| 9-Tone | ... | #142 Auxiliary Blues | = | Dim P. 2- 2 4 5 5+ 6 |

Ethnic Uses: ---

Source:

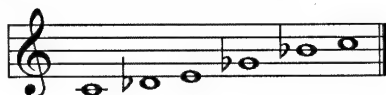
Reeves, page 236

*Uses only white piano keys except for one note

#170 Major 2- 4omit 5- 6omit 7-

JAZZ DOMINANT PENTATONIC

5-Tones



Intervals: $\frac{1}{2}$ -1 $\frac{1}{2}$ -1 - 2-1

Formula: (5) - (x-14)

Modal Series Scale Point Tone: MS 5-XII:1

Backward: --- [Major 3omit 4omit 5- 6-; (n)-(x-9)]

Backward MS:SPT: MS 5-XIII:3

Alternate Symbols:

- #1 Major 2- 4+ 5omit 6omit 7-
- #1 Major 2- 4+ 5omit 6+ 7omit
- #1 MAJOR 2- 4omit 5- 6omit 7-
- #1 Major 4omit 6omit 2- 5- 7-
- #1 Major 5omit 6omit 2- 4+ 7-
- #1 Major 5omit 7omit 2- 4+ 6+
- #21 India 5omit 6omit
- #28 Oriental 4omit 6omit

Alternate Names:

JAZZ DOMINANT PENTATONIC

Jazz Pentatonic

Jazz Scale

Altered:

C D \flat E G \flat B \flat c	6-Tone ... #79 Promeths.-Neap. = Jazz Dom P: 6
*D \flat D F G B d \flat	7-Tone ... #21 India = Jazz Dom P: 5 5+ 6
D E \flat G \flat A \flat C d	#28 Oriental = Jazz Dom P: 4 6
E \flat E G A D \flat e \flat	8-Tone ... #109 Diminished #2 = Jz.Dom.P: 3- 3 5 5+ 6
E F G \sharp A \sharp D e	#110 Espla's = Jz.Dom.P: 3- 3 4 6-
F G \flat A B E \flat f	
F \sharp G B \flat C E f \sharp	
G A \flat B D \flat F g	
A \flat A C D G \flat a \flat	
A B \flat D \flat E \flat G a	
B \flat B D E A \flat b \flat	
B C E \flat F A b	

Ethnic Uses: ---

Source:

Reeves, page 236

*Uses only white piano keys except for one note

#171 Major 2+ 4omit 5+ 6+ 7omit JAPANESE PENTATONIC #3

5-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ -2 - 1-1

Formula: (p) - (x-6)

Modal Series Scale Point Tone: MS 5-VI:3

Backward: --- [Major 4omit 5+ 7omit; (i)-(x-3)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2+ 4omit 5+ 6+ 7omit
- #1 Major 2+ 4omit 5omit 6- 7-
- #1 Major 2+ 4omit 5+ 6omit 7-
- #1 Major 2omit 3- 4- 5omit 6- 7-
- #1 Major 2omit 3- 4- 5+ 6+ 7omit
- #1 Major 2omit 3- 4- 5+ 6omit 7-
- #1 Major 2omit 5omit 3- 4- 6- 7-
- #1 Major 2omit 6omit 3- 4- 5+ 7-
- #1 Major 2omit 7omit 3- 4- 5+ 6+
- #1 Major 4omit 5omit 2+ 6- 7-
- #1 Major 4omit 6omit 2+ 5+ 7-
- #1 Major 4omit 7omit 2+ 5+ 6+
- #8 Super-Locrian 2omit 5omit
- #11 Byzantine 2omit 5omit
- #25 Chromatic Phrygian 4omit 7omit
- #29 Persian 4omit 6omit
- #43 Greek 2omit 5omit

Alternate Names:

Augmented Dominant Pentatonic
 JAPANESE PENTATONIC #3
 Jazz Scale
 Jazz Pentatonic

(cont'd)

#171 Major 2+ 4om 5+ 6+ 7om (cont'd) JAPANESE PENT. #3 (cont'd) 5-Tones

Altered:

7-Tone	...	#8	Super-Locrian	=	Jap.P.#3: 1 1+ 4+
		#11	Byzantine	=	Jap.P.#3: 1 1+ 5- 5
		#25	Chrm. Phrygian	=	Jap.P.#3: 4 7
		#29	Persian	=	Jap.P.#3: 4 6- 6
		#43	Greek	=	Jap.P.#3: 2- 2 5- 5
8-Tone	...	#113	Composite #1	=	Jap.P.#3: 1 1+ 4+ 5- 5
		#122	Aeolian 8-T #1	=	Jap.P.#3: 2- 2 4 5- 5
9-Tone	...	#144	Aeolian 9-Tone	=	J#3: 2- 2 4 5- 5 6- 6

Ethnic Uses:

Japan

C D# E G# A# c
 *Db E F A B db
 D F Gb Bb C d
 Eb F# G B Db eb
 *E G Ab C D e
 F G# A C# D# f
 Gb A Bb D E gb
 G A# B D# F g
 Ab B C E Gb ab
 *A C Db F G a
 Bb C# D Gb Ab bb
 *B D Eb G A b

*Uses only white piano keys except for one note

#172 Major 2- 4+ 5omit 7omit VIBHASA (Hindu)

5-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ -1 - $1\frac{1}{2}$ - $1\frac{1}{2}$

Formula: (5) - (x-11)

Modal Series Scale Point Tone: MS 5-XI:1

Backward: --- [Major 2omit 3- 4omit 5- 6-]
[(19)-(x-9)]

Backward MS:SPT: MS 5-X:2

Alternate Symbols:

- #1 MAJOR 2- 4+ 5omit 7omit
- #1 Major 2- 4omit 5- 7omit
- #1 Major 4omit 7omit 2- 5-
- #1 Major 5omit 7omit 2- 4+
- #17 Marava 5omit 7omit
- #21 India 5omit 7omit
- #28 Oriental 4omit 7omit

Alternate Names:

Hindu
VIBHASA

C D \flat E F \sharp A c
 D \flat D F G B \flat d \flat
 D E \flat G \flat A \flat B d
 *E \flat E G A C e \flat
 E F A \flat B \flat D \flat e
 F G \flat A B D f
 F \sharp G A \sharp C D \sharp f \sharp
 G A \flat B D \flat E g
 *A \flat A C D F a \flat
 A B \flat D \flat E \flat G \flat a
 *B \flat B D E G b \flat
 B C D \sharp F G \sharp b

Altered:

6-Tone	...	#78 Panchana	=	Vibhasa 7
		#79 Promeths-Neap.	=	Vibhasa 7-
7-Tone	...	#17 Marava	=	Vibhasa 5 7
		#21 India	=	Vibhasa 5 7-
		#28 Oriental	=	Vibhasa 4- 4 7-
8-Tone	...	#107 Hindu	=	Vibhasa 2 2+ 5 7
		#118 Buzurg	=	Vibhasa 4- 4 5 7
		#120 Irak	=	Vibhasa 4- 4 5+ 7
9-Tone	...	#141 Hindu	=	Vibhasa 2 2+ 5 5+ 7

Ethnic Uses:

Northern India (Hindu)

*Uses only white piano
keys except for one note

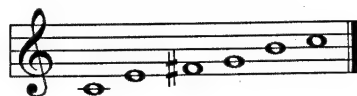
Source:

Danielou #2, page 107

#173 Major 2omit 4+ 6omit

HIRAJOSHI #5 (Japanese)

5-Tones



Intervals: 2-1- $\frac{1}{2}$ - 2- $\frac{1}{2}$

Formula: (z) - (x-13)

Modal Series Scale Point Tone: MS 5-III:5

Backward: #156 Pelog #4

Backward MS:SPT: MS 5-IV:4

Alternate Symbols:

- #1 MAJOR 2omit 4+ 6omit
- #1 Major 2omit 6omit 4+
- #17 Marava 2omit 6omit
- #20 Chromatic Hypolydian 2omit 6omit
- #51 Lydian 2omit 6omit

Alternate Names:

Chinese
Ditonic Scale
HIRAJOSHI #5 (Japan)
Pelog, Nem Mode (Java)

Altered:

7-Tone	...	#17 Marava	= Hira. #5: 2- 6
		#20 Chr. Hypolydian	= Hira. #5: 2- 6-
		#51 Lydian	= Hira. #5: 2 6
#8-Tone	...	#107 Hindu	= Hira. #5: 2- 2 6
		#131 Ryo 8-Tone	= Hira. #5: 2 4- 4 6
		#132 Hindu	= Hira. #5: 2 6- 6
9-Tone	...	#140 Hindu	= Hira. #5: 2- 2 4- 4 6
		#141 Hindu	= Hira. #5: 2- 2 6- 6
		#147 Ryo 9-Tone	= Hira#5: 2 4- 4 6 7- 7

(cont'd)

#173 Major 2om 4+ 6om (cont'd)**HIRAJOSHI #5** (cont'd)5-Tones

Ethnic Uses:

Black Africa

China

Japan

Java

Source:

Colin, Page 307

*C E F# G B c
 Db F G Ab C db
 D F# G# A C# d
 Eb G A Bb D eb
 E G# A# B D# e
 **F A B C E f
 Gb Bb C Db F gb
 G B C# D F# g
 Ab C D Eb G ab
 A C# D# E G# a
 *Bb D E F A bb
 B D# F Gb A# b

*Uses only white piano keys except for one note

**Uses only white piano keys

#174 Major 2+ 4omit 6omit 7-

PENTATONIC-DOMINANT

5-Tones



Intervals: $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ -1

Formula: Aug - (x-10)

Modal Series Scale Point Tone: MS 5-X:5

Backward: --- [Major 3omit 5+ 7omit; (12)-(x-3)]

Backward MS:SPT: MS 5-XI:3

Alternate Symbols:

- #1 MAJOR 2+ 4omit 6omit 7-
- #1 Major 2omit 3-3 4omit 6omit 7-
- #1 Major 2omit 3- 4- 6omit 7-
- #1 Major 2omit 4omit 6omit 3- 3 7-
- #1 Major 2omit 6omit 3- 4- 7-
- #1 Major 4omit 6omit 2+ 7-
- #18 Blues 4omit 4+omit
- #22 Hungarian-Major 4omit 6omit
- #32 Roumanian-Major 4omit 6omit
- #43 Greek 2omit 6omit

Alternate Names:

Jazz Scale against Dominant 7th

Jazz Pentatonic

PENTATONIC-DOMINANT

Altered:

7-Tone	...	#18 Blues	=	Pent-Dom 4 4+
		#22 Hungarn-Major	=	Pent-Dom 4+ 6
		#32 Roumanian-Maj.	=	Pent-Dom 4 6
		#43 Greek	=	Pent-Dom 2- 2 6-
8-Tone	...	#109 Diminished #2	=	Pent-Dom 1 1+ 4+ 6
		#112 Latin American	=	Pent-Dom 1 1+ 4 6
		#121 Jobim's	=	Pent-Dom 2- 2 4+ 6

(cont'd)

#174 Major 2+ 4om 6om 7- (cont'd)

PENT.-DOMINANT (cont'd)

5-Tones

Altered (cont'd):

8-Tone (cont'd) ... #122 Aeolian 8-T #1 = Pent-Dom 2- 2 4 6-

#123 Dorian 8-Tn #1 = Pent-Dom 2- 2 4 6

9-Tone ... #142 Auxiliary Bls. = Pent-Dom 2- 2 4 4+ 6

#144 Aeolian 9-Tn = Pent-Dom 2- 2 4 6- 6

#145 Dorian 9-Tone = Pnt-Dom 2- 2 4 6 7 7+

Ethnic Uses: ---

Source:

Reeves, Page 236

C	D#	E	G	Bb	c
Db	E	F	Ab	B	db
*D	F	Gb	A	C	d
Eb	F#	G	Bb	Db	eb
*E	G	Ab	B	D	e
F	G#	A	C	D#	f
Gb	A	Bb	Db	E	gb
*G	A#	B	D	F	g
Ab	B	C	Eb	Gb	ab
*A	C	Db	E	G	a
Bb	C#	D	F	Ab	bb
B	D	Eb	Gb	A	b

*Uses only white piano keys except for one note

#175 Major 2- 4omit 6- 7omit

REWA (Hindu)

5-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ -2

Formula: (6) - (x-4)

Modal Series Scale Point Tone: MS 5-XIV:1

Backward: -- [Major 2om 5om 6-; (v) - (x-9)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 2- 4omit 6- 7omit
- #1 Major 4omit 7omit 2- 6-
- #20 Chromatic Hypolydian 4omit 7omit
- #30 Double Harmonic 4omit 7omit
- #31 Spanish 4omit 7omit

Alternate Names:

Hindu
REWA

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|---------------------|
| 6-Tone | ... | #81 | Combined-Alter. | = | Rewa 4+ |
| | | #83 | Bangala | = | Rewa 4 |
| 7-Tone | ... | #20 | Chrm. Hypolyd. | = | Rewa 4+ 7 |
| | | #30 | Dbl. Harmonic | = | Rewa 4 7 |
| | | #31 | Spanish | = | Rewa 4 7- |
| 9-Tone | ... | #141 | Hindu | = | Rewa 2 2+ 4+ 6 6+ 7 |

Ethnic Uses:

Northern India (Hindu)

Source:

Danielou #2, page 173

C D \flat E G A \flat c
D \flat D F G \sharp A d \flat
D E \flat F \sharp A B \flat d
E \flat E G A \sharp B e \flat
*E F G \sharp B C e
F G \flat A C D \flat f
F \sharp G A \sharp C \sharp D f \sharp
G A \flat B D E \flat g
A \flat A C D \sharp E a \flat
A B \flat D \flat E F a
B \flat B D F G \flat b \flat
B C D \sharp F \sharp G b

*Uses only white piano keys except for one note

#176 Major 2- 4omit 6omit 7-

DOMINANT PENTATONIC

5-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ -1

Formula: (6) - (x-10)

Modal Series Scale Point Tone: MS 5-XV:1

Backward: --- [Major 3om 5om 6-; (12) - (x-9)]

Backward MS:SPT: ---

Alternate Symbols:

#1 MAJOR 2- 4omit 6omit 7-

#1 Major 4omit 6omit 2- 7-

#21 India 4omit 6omit

#31 Spanish 4omit 6omit

#33 Arabic 4omit 6omit

Alternate Names:

DOMINANT PENTATONIC

Jazz Scale against Dominant 7th

Jazz Pentatonic

Altered:

C	D \flat	E	G	B \flat	c	6-Tone	...	#84	Greek	=	Dom. Pent. 4
D \flat	D	F	A \flat	B	d \flat	7-Tone	...	#21	India	=	Dom. Pent. 4+ 6
D	E \flat	G \flat	A	C	d			#31	Spanish	=	Dom. Pent. 4 6-
E \flat	E	G	B \flat	D \flat	e \flat			#33	Arabic	=	Dom. Pent. 4 6
*E	F	G \sharp	B	D	e	8-Tone	...	#109	Diminished #2	=	Dom. Pent. 3- 3 4+ 6
F	G \flat	A	C	E \flat	f			#111	Spanish 8-Tone	=	Dom. Pent. 3- 3 4 6-
F \sharp	G	A \sharp	C \sharp	E	f \sharp			#112	Latin American	=	Dom. Pent. 3- 3 4 6
G	A \flat	B	D	F	g						
A \flat	A	C	E \flat	G \flat	a \flat						
A	B \flat	D \flat	E	G	a						
B \flat	B	D	F	A \flat	b \flat						
B	C	D \sharp	F \sharp	A	b						

Ethnic Uses: ---

Source:

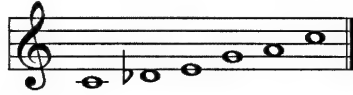
Reeves, page 236

*Uses only white piano keys except for one note

#177 Major 2- 4omit 7omit

SCRIABIN'S SCALE

5-Tones



Intervals: $\frac{1}{2}$ - $1\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $1\frac{1}{2}$

Formula: (6) - (x-7)

Modal Series Scale Point Tone: MS 5-X:1

Backward: --- [Major 2om 3- 5om 6-; (17) - (x-9)]

Backward MS:SPT: MS 5-XI:2

Actual Spelling: Major 1 1+ 2omit 6omit 7omit

Alternate Symbols:

- #1 Major 1 1+ 2omit 4omit 7omit
- #1 MAJOR 2- 4omit 7omit
- #1 Major 2omit 4omit 7omit 1 1+
- #1 Major 4omit 7omit 2-
- #2 Ananda 4omit 7omit
- #17 Marava 4omit 7omit
- #21 India 4omit 7omit
- #33 Arabic 4omit 7omit

Altered:

- | | | | | | |
|--------|-----|------|----------------|---|---------------------|
| 7-Tone | ... | #2 | Ananda | = | Scriabin 4 7 |
| | | #17 | Marava | = | Scriabin 4+ 7 |
| | | #21 | India | = | Scriabin 4+ 7- |
| | | #33 | Arabic | = | Scriabin 4 7- |
| 8-Tone | ... | #109 | Diminished #2 | = | Scriabin 3- 3 4+ 7- |
| | | #112 | Latin American | = | Scriabin 3- 3 4 7- |

Ethnic Uses: ---

Used by:

Scriabin: Sonata #7

(cont'd)

#177 Major 2- 4om 7om (cont'd)

SCRIABIN (cont'd)

5-Tones

Source:

Slonimsky, page 161

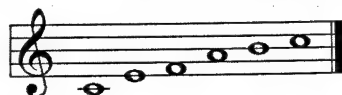
*C D \flat E G A c
 D \flat D F A \flat B \flat d \flat
 D E \flat G \flat A B d
 E \flat E G B \flat C e \flat
 E F G \sharp B C \sharp e
 *F G \flat A C D f
 F \sharp G B \flat D \flat E \flat f \sharp
 *G A \flat B D E g
 A \flat A C E \flat F a \flat
 A B \flat D \flat E G \flat a
 *B \flat B D F G b \flat
 B C D \sharp F \sharp G \sharp b

*Uses only white piano keys except for one note

#178 Major 2omit 5omit

HIRAJOSHI #3

5-Tones



Intervals: $2-\frac{1}{2}-2$ - $1-\frac{1}{2}$

Formula: (y) - (x-5)

Modal Series Scale Point Tone: MS 5-III:3

Backward: #155 Pelog #1

Backward MS:SPT: MS 5-IV:1

Alternate Symbols:

- #1 MAJOR 2omit 5omit
- #2 Ananda 2omit 5omit
- #23 Chromatic Lydian 2omit 5omit
- #56 Ionian-Augmented 2omit 5omit

Alternate Names:

Ditonic Scale
HIRAJOSHI #3

Altered:

7-Tone	...	#1	Major	=	Hirajoshi #3: 2 5
		#2	Ananda	=	Hirajoshi #3: 2- 5
		#23	Chrm. Lydian	=	Hirajoshi #3: 2- 5-
		#56	Ionian-Augment.	=	Hirajoshi #3: 2 5+
8-Tone	...	#104	Hindu	=	Hirajoshi #3: 2- 2 5
		#118	Buzurg	=	Hirajoshi #3: 2- 5- 5
		#120	Irak	=	Hira. #3: 2- 5- 6- 6
		#131	Ryo 8-Tone	=	Hira. #3: 2 4 4+ 5
9-Tone	...	#136	Mixolydian 8-T	=	Hira. #3: 2 5 7- 7
		#140	Hindu	=	Hira. #3: 2- 2 5- 5
		#143	Bartok's 9-Tn	=	Hira. #3: 3- 3 5- 5
		#145	Dorian 9-Tone	=	Hir#3: 2 3- 3 5 7- 7
		#147	Ryo 9-Tone	=	Hir#3: 2 4 4+ 5 7- 7

(cont'd)

#178 Major 2om 5om (cont'd)

HIRAJOSHI #3 (cont'd)

5-Tones

Ethnic Uses:

Black Africa
Greece, Ancient
Japan

Source:

Persichetti, page 50

**C E F A B c
 Db F Gb Bb C db
 D F# G B C# d
 Eb G Ab C D eb
 E G# A C# D# e
 *F A Bb D E f
 F# A# B D# F f#
 *G B C E F# g
 Ab C Db F G ab
 A C# D F# G# a
 Bb D Eb G A bb
 B D# E G# A# b

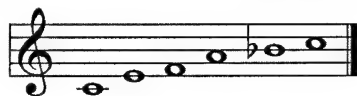
*Uses only white piano keys except for one note

**Uses only white piano keys

#179 Major 2omit 5omit 7-

PELOG #3

5-Tones



Intervals: $2-\frac{1}{2}-2$ - $\frac{1}{2}-1$

Formula: (y) - (x-2)

Modal Series Scale Point Tone: MS 5-IV:3

Backward: #184 Hirajoshi #1

Backward MS:SPT: MS 5-III:1

Alternate Symbols:

- #1 MAJOR 2omit 5omit 7-
- #28 Oriental 2omit 5omit
- #29 Persian 2omit 5omit
- #32 Roumanian-Major 2omit 5omit
- #33 Arabic 2omit 5omit
- #58 Zenkla 2omit 5omit
- #59 Rummel-Meia 2omit 5omit
- #62 Mixolydian 2omit 5omit

Alternate Names:

PELOG #3
Pelog, Mode 3

Altered:

6-Tone	...	#85	Polish	=	Pelog #3: 5
7-Tone	...	#28	Oriental	=	Pelog #3: 2- 5-
		#29	Persian	=	Pelog #3: 2+ 5+
		#32	Roumanian-Maj.	=	Pelog #3: 2+ 5
		#33	Arabic	=	Pelog #3: 2- 5
		#58	Zenkla	=	Pelog #3: 2 5-
		#59	Rummel-Meia	=	Pelog #3: 2 5+
		#62	Mixolydian	=	Pelog #3: 2 5
8-Tone	...	#112	Latin American	=	Pelog #3: 2- 3- 3 5
		#123	Dorian 8-T #1	=	Pelog #3: 2 2+ 5
		#133	Hindu	=	Pelog #3: 2 5- 5
		#136	Mixolydian 8-Tn	=	Pelog #3: 2 5 7 7+

(cont'd)

#179 Major 2om 5om 7- (cont'd) PELOG #3 (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#144 Aeolian 9-Tn	=	Plg.#3: 2 3- 3 5 6- 6
		#145 Dorian 9-Tone	=	Plg.#3: 2 3- 3 5 7 7+
		#147 Ryo 9-Tone	=	Plg.#3: 2 5- 5 7 7+
		#149 Adonai Malakh	=	Plg.#3: low 6 7+, high 2 5
10-Tone	...	#152 Russian Liturg.	=	Plg.#3: 2 5 9 10- 11

Ethnic Uses:

Japan

Source:

Persichetti, page 50

*C E F A B \flat c
 D \flat F G \flat A \sharp B d \flat
 *D F \sharp G B C d
 E \flat G A \flat C D \flat e \flat
 E G \sharp A C \sharp D e
 F A B \flat D E \flat f
 F \sharp A \sharp B D \sharp E f \sharp
 **G B C E F g
 A \flat C D \flat F G \flat a \flat
 A C \sharp D F \sharp G a
 B \flat D E \flat G A \flat b \flat
 B D \sharp E G \sharp A b

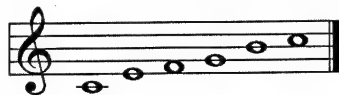
*Uses only white piano keys except for one note

**Uses only white piano keys

#180 Major 2omit 6omit

PELOG #5

5-Tones



Intervals: $2-\frac{1}{2}$ - 1 - $2-\frac{1}{2}$

Formula: (u) - (x-13)

Modal Series Scale Point Tone: MS 5-IV:5

Backward: #162 Hirajoshi #4

Backward MS:SPT: MS 5-III:4

Alternate Symbols:

- #1 MAJOR 2omit 6omit
- #2 Ananda 2omit 6omit
- #30 Double Harmonic 2omit 6omit
- #60 Harmonic-Major 2omit 6omit

Alternate Names:

- Ditonic Scale
- PELOG #5
- Pelog, Lima Mode (Java)
- Pelog, Mode 5

Altered:

7-Tone	...	#1	Major	=	Pelog #5: 2 6
		#2	Ananda	=	Pelog #5: 2- 6
		#30	Dbl. Harmonic	=	Pelog #5: 2- 6-
		#60	Harmonic-Major	=	Pelog #5: 2 6-
8-Tone	...	#104	Hindu	=	Pelog #5: 2- 2 6
		#131	Ryo 8-Tone	=	Pelog #5: 2 4 4+ 6
		#136	Mixolydian 8-T	=	Pelog #5: 2 6 7- 7
9-Tone	...	#137	Tcherepnin	=	Pelog #5: 2- 2 3- 3 6
		#140	Hindu	=	Pelog #5: 2- 2 4 4+ 6
		#143	Bartok's 9-Tn	=	Plg.#5: 2 3- 3 5- 5 6
		#145	Dorian 9-Tone	=	Plg.#5: 2 3- 3 6 7- 7
		#147	Ryo 9-Tone	=	Plg.#5: 2 4 4+ 6 7- 7

(cont'd)

#180 Major 2om 6om

PELOG #5 (cont'd)

5-Tones

Ethnic Uses:

Black Africa

Japan

Java

Source:

Harvard Dictionary of Music, page 653

**C E F G B c
 D \flat F G \flat A \flat C d \flat
 D F \sharp G A C \sharp d
 E \flat G A \flat B \flat D e \flat
 E G \sharp A B D \sharp e
 *F A B \flat C E f
 G \flat A \sharp B D \flat F g \flat
 *G B C D F \sharp g
 A \flat C D \flat E \flat G a \flat
 A C \sharp D E G \sharp a
 B \flat D E \flat F A b \flat
 B D \sharp E F \sharp A \sharp b

*Uses only white piano keys except for one note

**Uses only white piano keys

#181 Major 2omit 6omit 7-

SEMITONAL PENTATONIC #3

5-Tones



Intervals: $2-\frac{1}{2}-1$ - $1\frac{1}{2}-1$

Formula: (u) - (x-10)

Modal Series Scale Point Tone: MS 5-II:3

Backward: #190 Kumoi #4

Backward MS:SPT: MS 5-I:4

Alternate Symbols:

- #1 MAJOR 2omit 6omit 7-
- #1 Major 2omit 6+ 7omit
- #1 Major 2omit 7omit 6+
- #31 Spanish 2omit 6omit
- #32 Roumanian-Major 2omit 6omit
- #33 Arabic 2omit 6omit
- #61 Hindustan 2omit 6omit
- #62 Mixolydian 2omit 6omit

Alternate Names:

Pelog, Barang Mode (Java)
SEMITONAL PENTATONIC #3

Altered:

6-Tone	...	#84	Greek	=	Semi Pent #3: 2-
		#85	Polish	=	Semi Pent #3: 6
		#102	Mixolydian 6-Tn	=	Semi Pent #3: 2
7-Tone	...	#31	Spanish	=	Semi Pent #3: 2- 6-
		#32	Roumanian-Maj.	=	Semi Pent #3 2+ 6
		#33	Arabic	=	Semi Pent #3: 2- 6
		#61	Hindustan	=	Semi Pent #3: 2 6-
		#62	Mixolydian	=	Semi Pent #3: 2 6

(cont'd)

#181 Major 2om 6om 7- (cont'd) SEMITONAL PENT. #3 (cont'd)

5-Tones

Altered (cont'd):

8-Tone	...	#111	Spanish 8-Tone	=	Semi #3: 2- 3- 3 6-
		#112	Latin American	=	Semi #3: 2- 3- 3 6
		#122	Aeolian 8-T #1	=	Semi #3: 2 3- 3 6-
		#123	Dorian 8-Tn #1	=	Semi #3: 2 3- 3 6
		#133	Hindu	=	Semi #3: 2 5- 5 6
		#136	Mixolydian 8-T	=	Semi #3: 2 6 7 7+
9-Tone	...	#144	Aeolian 9-Tone	=	Semi #3: 2 3- 3 6- 6
		#145	Dorian 9-Tone	=	Semi #3: 2 3- 3 6 7 7+
		#147	Ryo 9-Tone	=	Semi #3: 2 4 4+ 6 7 7+
		#149	Adonai Malakh	=	S.P.#3: low 6 7+, high 2 6
10-Tone	...	#152	Russian Liturg.	=	Semi #3: 2 6 9 10- 11

Ethnic Uses:

Java

*C E F G B \flat c
 D \flat F G \flat A \flat B d \flat
 *D F \sharp G A C d
 E \flat G A \flat B \flat D \flat e \flat
 *E G \sharp A B D e
 F A B \flat C E \flat f
 F \sharp A \sharp B C \sharp E f \sharp
 **G B C D F g
 A \flat C D \flat E \flat G \flat a \flat
 *A C \sharp D E G a
 B \flat D E \flat F A \flat b \flat
 B D \sharp E F \sharp A b

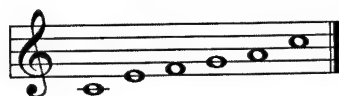
*Uses only white piano keys except for one note

**Uses only white piano keys

#182 Major 2omit 7omit

BULGARIAN

5-Tones



Intervals: $2-\frac{1}{2}-1$ - $1-1\frac{1}{2}$

Formula: (u) - (x-7)

Modal Series Scale Point Tone: MS 5-VIII:1

Backward: --- [Major 2om 3- 6- 7om; (16) - (x-4)]

Backward MS:SPT: MS 5-IX:4

Alternate Symbols:

- #1 MAJOR 2omit 7omit
- #2 Ananda 2omit 7omit
- #32 Roumanian-Major 2omit 7omit
- #33 Arabic 2omit 7omit
- #62 Mixolydian 2omit 7omit

Altered:

6-Tone	...	#85	Polish	=	Bulgarian 7-
		#103	Guido's	=	Bulgarian 2
7-Tone	...	#1	Major	=	Bulgarian 2 7
		#2	Ananda	=	Bulgarian 2- 7
		#32	Roumanian-Maj.	=	Bulgarian 2+ 7-
		#33	Arabic	=	Bulgarian 2- 7-
		#62	Mixolydian	=	Bulgarian 2 7-
8-Tone	...	#104	Hindu	=	Bulgarian 2- 2 7
		#112	Latin American	=	Bulgarian 2- 3- 3 7-
		#123	Dorian 8-Tn #1	=	Bulgarian 2 3- 3 7-
		#131	Ryo 8-Tone	=	Bulgarian 2 4 4+ 7
		#133	Hindu	=	Bulgarian 2 5- 5 7-
9-Tone	...	#136	Mixolydian 8-Tn	=	Bulgarian 2 7- 7
		#140	Hindu	=	Bulg. 2- 2 4 4+ 7
		#143	Bartok's 9-Tn	=	Bulg. 2 3- 3 5- 5 7
		#144	Aeolian 9-Tone	=	Bulg. 2 3- 3 6- 6 7-
		#145	Dorian 9-Tone	=	Bulg. 2 3- 3 7- 7
		#147	Ryo 9-Tone	=	Bulg. 2 4 4+ 7- 7
		#149	Adonai Malakh	=	Bulg. low 6 7, high 2 7-

(cont'd)

#182 Major 2om 7om (cont'd)

BULGARIAN (cont'd)

5-Tones

Altered (cont'd):

10-Tone ... #152 Russian Litg. = Bulg. 2 7- 9 10- 11

Ethnic Uses:

American Indian (Northern)

Bulgaria, Southern

Source:

Densmore, page 137

**C E F G A c
 D \flat F G \flat A \flat B \flat d \flat
 *D F \sharp G A B d
 E \flat G A \flat B \flat C e \flat
 E G \sharp A B C \sharp e
 *F A B \flat C D f
 F \sharp A \sharp B C \sharp D \sharp f \sharp
 **G B C D E g
 A \flat C D \flat E \flat F a \flat
 A C \sharp D E F \sharp a
 B \flat D E \flat F G b \flat
 B D \sharp E F \sharp G \sharp b

*Uses only white piano keys except for one note

**Uses only white piano keys

#183 Major 3omit 4+ 6omit

PELOG #2

5-Tones



Intervals: 1-2- $\frac{1}{2}$ - 2- $\frac{1}{2}$

Formula: (k) - (x-13)

Modal Series Scale Point Tone: MS 5-IV:2

Backward: #157 Hirajoshi #2

Backward MS:SPT: MS 5-III:2

Alternate Symbols:

- #1 MAJOR 3omit 4+ 6omit
- #1 Major 3omit 6omit 4+
- #37 Lydian-Diminished 3omit 6omit
- #38 Conway's 7-Tone 3omit 4omit 4+
- #40 Hungarian-minor 3omit 6omit
- #51 Lydian 3omit 6omit

Alternate Names:

- PELOG #2
- Pelog, Mode 2

Altered:

7-Tone	...	#37	Lydian-Dimin.	=	Pelog #2: 3- 6
		#38	Conway's 7-Tn	=	Pelog #2: 3- 4- 4
		#40	Hungarian-min.	=	Pelog #2: 3- 6-
		#51	Lydian	=	Pelog #2: 3 6
8-Tone	...	#107	Hindu	=	Pelog #2: 2- 2 3 6
		#131	Ryo 8-Tone	=	Pelog #2: 3 4- 4 6
		#132	Hindu	=	Pelog #2: 3 6- 6
9-Tone	...	#140	Hindu	=	Plg.#2: 2- 2 3 4- 4 6
		#141	Hindu	=	Plg.#2: 2- 2 3 6- 6
		#147	Ryo 9-Tone	=	Plg.#2: 3 4- 4 6 7- 7
10-Tone	...	#150	Algerian	=	Plg.#2: 3- 6- 9 10- 11

(cont'd)

#183 Major 3om 4+ 6om (cont'd)

PELOG #2 (cont'd)

5-Tones

Ethnic Uses:

Java

Japan

Source:

Persichetti, page 50

*C	D	F#	G	B	c
Db	Eb	G	Ab	C	db
D	E	G#	A	C#	d
Eb	F	A	Bb	D	eb
E	F#	A#	B	D#	e
**F	G	B	C	E	f
Gb	Ab	C	Db	F	gb
G	A	C#	D	F#	g
Ab	Bb	D	Eb	G	ab
A	B	D#	E	G#	a
*Bb	C	E	F	A	bb
B	C#	F	Gb	A#	b

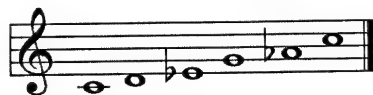
*Uses only white piano keys except for one note

**Uses only white piano keys

#184 Major 3- 4omit 6- 7omit

HIRAJOSHI #1

5-Tones



Intervals: $1-\frac{1}{2}-2$ - $\frac{1}{2}-2$

Formula: (h) - (x-4)

Modal Series Scale Point Tone: MS 5-III:1

Backward: #179. Pelog #3

Backward MS:SPT: MS 5-IV:3

Alternate Symbols:

- #1 MAJOR 3- 4omit 6- 7omit
- #1 Major 4omit 7omit 3- 6-
- #40 Hungarian-minor 4omit 7omit
- #41 Chromatic Hypodorian 4omit 6- 6omit
- #42 Greek 4omit 7omit
- #43 Greek 4omit 7omit
- #47 Harmonic minor 4omit 7omit
- #48 Ptolemy's 4omit 6- 6omit
- #49 Natural minor 4omit 7omit

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|----------------------------|
| 6-Tone | ... | #93 | Glinka's | = | Hirajoshi #1: 4 |
| 7-Tone | ... | #40 | Hungarian-min. | = | Hirajoshi #1: 4+ 7 |
| | | #41 | Chr. Hypodorian | = | Hirajoshi #1: 4- 6 6+ |
| | | #42 | Greek | = | Hirajoshi #1: 4+ 7- |
| | | #43 | Greek | = | Hirajoshi #1: 4- 7- |
| | | #47 | Harmonic minor | = | Hirajoshi #1: 4 7 |
| | | #48 | Ptolemy's | = | Hirajoshi #1: 4 6 6+ |
| | | #49 | Natural minor | = | Hirajoshi #1: 4 7- |
| 8-Tone | ... | #106 | Phrygian 8-#1 | = | Hira. #1: 2- 2 4 7- |
| | | #122 | Aeolian 8-T #1 | = | Hira. #1: 3 3+ 4 7- |
| | | #127 | Arabic | = | Hira. #1: 4 5 5+ 7 |
| | | #128 | Aeolian 8-T #2 | = | Hira. #1: 4 6 6+ 7- |
| | | #129 | Isfahan | = | Hira. #1: 4 7- 7 |
| | | #135 | Magon Abot | = | Hira. #1: low 7, high 4 7- |

(cont'd)

#184 Major 3- 4om 6- 7om (cont'd) HIRAJOSHI #1 (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#138	Locrian 9-Tone	=	Hir.#1: 2- 2 4 5- 5 7-
		#139	Phrygian 9-Tn	=	Hir.#1: 2- 2 4 6 6+ 7-
		#144	Aeolian 9-Tone	=	Hir.#1: 3 3+ 4 6 6+ 7-
10-Tone	...	#150	Algerian	=	Hir.#1: 4+ 7 9 10- 11

Ethnic Uses:

Egypt

Japan

Source:

Persichetti, page 50

C D E \flat G A \flat c
 D \flat E \flat E G \sharp A d \flat
 *D E F A B \flat d
 E \flat F G \flat A \sharp B e \flat
 *E F \sharp G B C e
 F G A \flat C D \flat f
 F \sharp G \sharp A C \sharp D f \sharp
 G A B \flat D E \flat g
 A \flat B \flat B D \sharp E a \flat
 **A B C E F a
 B \flat C D \flat F G \flat b \flat
 B C \sharp D F \sharp G b

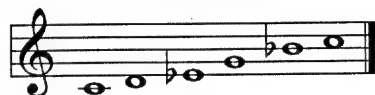
*Uses only white piano keys except for one note

**Uses only white piano keys

#185 Major 3- 4omit 6omit 7-

AFRICAN

5-Tones



Intervals: $1 - \frac{1}{2} - 2 - 1 - \frac{1}{2} - 1$

Formula: (h) - (x-10)

Modal Series Scale Point Tone: MS 5-IX:1

Backward: --- [Major 3om 5om 7-; (j) - (x-2)]

Backward MS:SPT: MS 5-VIII:4

Alternate Symbols:

- #1 MAJOR 3- 4omit 6omit 7-
- #1 Major 3- 4omit 6+ 7omit
- #1 Major 4omit 6omit 3- 7-
- #1 Major 4omit 7omit 3- 6+
- #42 Greek 4omit 6omit
- #43 Greek 4omit 6omit
- #44 Roumanian-minor 4omit 6omit
- #49 Natural minor 4omit 6omit
- #50 Dorian 4omit 6omit

Altered:

6-Tone	...	#88	Akebono	=	African 6
		#92	Greek	=	African 4
7-Tone	...	#42	Greek	=	African 4+ 6-
		#43	Greek	=	African 4- 6-
		#44	Roumanian-min.	=	African 4+ 6
		#49	Natural minor	=	African 4 6-
		#50	Dorian	=	African 4 6
8-Tone	...	#106	Phrygian 8-#1	=	African 2- 2 4 6-
		#122	Aeolian 8-T #1	=	African 3 3+ 4 6-
		#123	Dorian 8-Tn #1	=	African 3 3+ 4 6
		#128	Aeolian 8-T #2	=	African 4 6- 6
		#129	Isfahan	=	African 4 6- 7 7+
		#130	Dorian 8-Tn #2	=	African 4 6 7 7+
		#135	Magon Abot	=	African low 7, high 4 6 7-

(cont'd)

#185 Major 3- 4om 6om 7- (cont'd) AFRICAN (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#138	Locrian 9-Tone	=	African 2- 2 4 5- 5 6-
		#139	Phrygian 9-Tn	=	African 2- 2 4 6- 6
		#142	Auxiliary Blues	=	African 3 3+ 4 4+ 6
		#144	Aeolian 9-Tone	=	African 3 3+ 4 6- 6
		#145	Dorian 9-Tone	=	African 3 3+ 4 6 7 7+
		#146	Armenian	=	African 4 6 9- 10

Ethnic Uses:

Black Africa

Source:

Harvard Dictionary of Music, page 20

C D E \flat G B \flat c
 D \flat E \flat E A \flat B d \flat
 **D E F A C d
 E \flat F G \flat B \flat D \flat e \flat
 *E F \sharp G B D e
 F G A \flat C E \flat f
 F \sharp G \sharp A C \sharp E f \sharp
 *G A B \flat D F g
 A \flat B \flat B E \flat G \flat a \flat
 **A B C E G a
 B \flat C D \flat F A \flat b \flat
 B C \sharp D F \sharp A b

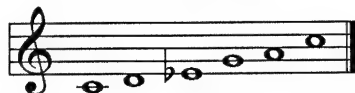
*Uses only white piano keys except for one note

**Uses only white piano keys

#186 Major 3- 4omit 7omit

KUMOI #1

5-Tones



Intervals: $1-\frac{1}{2}-2$ - $1-1\frac{1}{2}$

Formula: (h) - (x-7)

Modal Series Scale Point Tone: MS 5-I:1

Backward: #161 Semitonal Pentatonic #1

Backward MS:SPT: MS 5-II:1

Alternate Symbols:

- #1 MAJOR 3- 4omit 7omit
- #1 Major 4omit 7omit 3-
- #34 Melodic minor 4omit 7omit
- #37 Lydian-Diminished 4omit 7omit
- #44 Roumanian-minor 4omit 7omit
- #50 Dorian 4omit 7omit

Alternate Names:

Hawaiian
Hirajoshi F Mode
Hirajoshi, 1st Special Tuning
Jazz Pentatonic
Jazz Scale
KUMOI #1

Altered:

6-Tone	...	#88	Akebono	=	Kumoi #1: 7-
7-Tone	...	#34	Melodic minor	=	Kumoi #1: 4 7
		#37	Lydian-Dimin.	=	Kumoi #1: 4+ 7
		#44	Roumanian-min.	=	Kumoi #1: 4+ 7-
		#50	Dorian	=	Kumoi #1: 4 7-
8-Tone	...	#121	Jobim's	=	Kumoi #1: 3 3+ 4+ 7-
		#123	Dorian 8-Tn #1	=	Kumoi #1: 3 3+ 4 7-
		#127	Arabic	=	Kumoi #1: 4 6- 6 7
		#128	Aeolian 8-Tn #2	=	Kumoi #1: 4 6- 6 7-
		#130	Dorian 8-Tn #2	=	Kumoi #1: 4 7- 7

(cont'd)

#186 Major 3- 4om 7om (cont'd) KUMOI #1 (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#139 Phrygian 9-Tn	=	Km. #1: 2- 2 4 6- 6 7-
		#142 Auxiliary Blues	=	Km. #1: 3 3+ 4 4+ 7-
		#144 Aeolian 9-Tone	=	Km. #1: 3 3+ 4 6- 6 7-
		#145 Dorian 9-Tone	=	Km. #1: 3 3+ 4 7- 7
		#146 Armenian	=	Km. #1: 4 7- 9- 10

Ethnic Uses:

Hawaii

Japan

Korea

Source:

Persichetti, page 50

C D E \flat G A c
 D \flat E \flat E A \flat B \flat d \flat
 **D E F A B d
 E \flat F G \flat B \flat C e \flat
 E F \sharp G B C \sharp e
 *F G A \flat C D f
 F \sharp G \sharp A C \sharp D \sharp f \sharp
 *G A B \flat D E g
 A \flat B \flat B E \flat F a \flat
 *A B C E F \sharp a
 B \flat C D \flat F G b \flat
 B C \sharp D F \sharp G \sharp b

*Uses only white piano keys except for one note

**Uses only white piano keys

#187 Major 3omit 4+ 7omit

SEMITONAL PENTATONIC #2

5-Tones



Intervals: 1-2- $\frac{1}{2}$ - 1- $\frac{1}{2}$

Formula: (k) - (x-7)

Modal Series Scale Point Tone: MS 5-II:2

Backward: #159 Kumoi #5

Backward MS:SPT: MS 5-I:5

Alternate Symbols:

- #1 MAJOR 3omit 4+ 7omit
- #1 Major 3omit 7omit 4+
- #37 Lydian-Diminished 3omit 7omit
- #44 Roumanian-minor 3omit 7omit
- #51 Lydian 3omit 7omit
- #55 Overtone 3omit 7omit

Altered:

	6-Tone	...	#89	Overtone 6-Tn	=	Semi Pent #2: 7-
	7-Tone	...	#37	Lydian-Dimin.	=	Semi Pent #2: 3- 7
			#44	Roumanian-min.	=	Semi Pent #2: 3- 7-
			#51	Lydian	=	Semi Pent #2: 3 7
			#55	Overtone	=	Semi Pent #2: 3 7-
*C	D	F#	G	A	c	
	D \flat	E \flat	G	A \flat	B \flat	d \flat
*D	E	G#	A	B	d	
	E \flat	F	A	B \flat	C	e \flat
	E	F#	A#	B	C#	e
**F	G	B	C	D	f	
	G \flat	A \flat	C	D \flat	E \flat	g \flat
*G	A	C#	D	E	g	
	A \flat	B \flat	D	E \flat	F	a \flat
	A	B	D#	E	F#	a
*B \flat	C	E	F	G	b \flat	
	B	C#	F	G \flat	A \flat	b
	8-Tone	...	#107	Hindu	=	Semi #2: 2- 2 3 7
			#121	Jobim's	=	Semi #2: 3- 3 7-
			#131	Ryo 8-Tone	=	Semi #2: 3 4- 4 7
			#132	Hindu	=	Semi #2: 3 6- 6 7
			#133	Hindu	=	Semi #2: 3 4- 4 7-
	9-Tone	...	#140	Hindu	=	Semi#2: 2- 2 3 4- 4 7
			#141	Hindu	=	Semi#2: 2- 2 3 6- 6 7
			#147	Ryo 9-Tone	=	Semi#2: 3 4- 4 7- 7

Ethnic Uses: ---

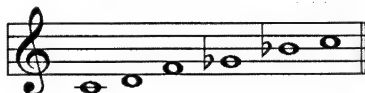
*Uses only white piano keys except for one note

**Uses only white piano keys

#188 Major 3omit 5- 6omit 7-

JAPANESE PENTATONIC #2

5-Tones



Intervals: $1-1\frac{1}{2}-\frac{1}{2}$ - $2-1$

Formula: (10) - (x-14)

Modal Series Scale Point Tone: MS 5-VI:2

Backward: --- [Major 3om 4+ 6om 7-; (k)-(x-10)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 3omit 5- 6omit 7-
- #1 Major 3omit 5- 6+ 7omit
- #1 Major 3omit 6omit 5- 7-
- #1 Major 3omit 7omit 5- 6+
- #45 Half-Diminished 3omit 6omit
- #46 Zangula 3omit 6omit
- #57 Locrian-Major 3omit 6omit
- #58 Zenkla 3omit 6omit

Altered:

- | | | | | | |
|--------|-----|------|-----------------|---|------------------------|
| 7-Tone | ... | #45 | Half-Dimin. | = | Jap. Pent. #2: 3- 6- |
| | | #46 | Zangula | = | Jap. Pent. #2: 3- 6 |
| | | #57 | Locrian-Major | = | Jap. Pent. #2: 3 6- |
| | | #58 | Zenkla | = | Jap. Pent. #2: 3 6 |
| 8-Tone | ... | #105 | Locrian 8-Tn #1 | = | Jap.Pnt.#2: 2- 2 3- 6- |
| | | #133 | Hindu | = | Jap.Pnt.#2: 3 5 5+ 6 |
| 9-Tone | ... | #138 | Locrian 9-Tone | = | JP#2: 2- 2 3- 5 5+ 6- |
| | | #147 | Ryo 9-Tone | = | JP#2: 3 5 5+ 6 7 7+ |

C D F G \flat B \flat c
 D \flat E \flat F \sharp G B d \flat
 *D E G A \flat C d
 E \flat F G \sharp A D \flat e \flat
 E F \sharp A B \flat D e
 F G A \sharp B D \sharp f
 F \sharp G \sharp B C E f \sharp
 *G A C D \flat F g
 A \flat B \flat C \sharp D G \flat a \flat
 *A B D E \flat G a
 B \flat C D \sharp E A \flat b \flat
 *B C \sharp E F A b

Ethnic Uses:

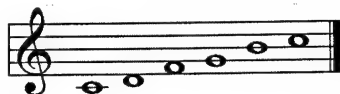
Japan

*Uses only white piano keys except for one note

#189 Major 3omit 6omit

SEMITONAL PENTATONIC #5

5-Tones



Intervals: $1-1\frac{1}{2}-1$ - $2-\frac{1}{2}$

Formula: (11) - (x-13)

Modal Series Scale Point Tone: MS 5-II:5

Backward: #163 Kumoi #2

Backward MS:SPT: MS 5-I:2

Alternate Symbols:

- #1 Major 3omit 6omit
- #34 Melodic minor 3omit 6omit
- #47 Harmonic minor 3omit 6omit
- #60 Harmonic-Major 3omit 6omit

Alternate Names:

Hindustan
Jazz Pentatonic
Jazz Scale
SEMITONAL PENTATONIC #5

Altered:

6-Tone	...	#86	Ionian 6-Tone	=	Semi Pent #5: 6
		#91	Armenian	=	Semi Pent #5: 6-
7-Tone	...	#1	Major	=	Semi Pent #5: 3 6
		#34	Melodic minor	=	Semi Pent #5: 3- 6
		#47	Harmonic minor	=	Semi Pent #5: 3- 6-
		#60	Harmonic-Major	=	Semi Pent #5: 3 6-
8-Tone	...	#104	Hindu	=	Semi #5: 2- 2 3 6
		#127	Arabic	=	Semi #5: 3- 6- 6
		#129	Isfahan	=	Semi #5: 3- 6- 7- 7
		#130	Dorian 8-Tn #2	=	Semi #5: 3- 6 7- 7
		#131	Ryo 8-Tone	=	Semi #5: 3 4 4+ 6
		#136	Mixolydian 8-Tn	=	Semi #5: 3 6 7- 7

(cont'd)

#189 Major 3om 6om (cont'd)

SEMITONAL PENT. #5 (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#140 Hindu	=	Semi#5: 2- 2 3 4 4+ 6
		#143 Bartok's 9-Tn	=	Semi#5: 3- 3 5- 5 6
		#145 Dorian 9-Tone	=	Semi#5: 3- 3 6 7- 7
		#147 Ryo 9-Tone	=	Semi#5: 3 4 4+ 6 7- 7

Ethnic Uses:

India (Hindu)

India, Ascending with #191 Descending

Japan

Source:

Danielou #2, page 361

**C D F G B c
 Db Eb Gb Ab C db
 *D E G A C# d
 Eb F Ab Bb D eb
 E F# A B D# e
 *F G Bb C E f
 Gb Ab B Db F gb
 *G A C D F# g
 Ab Bb Db Eb G ab
 *A B D E G# a
 Bb C Eb F A bb
 B C# E F# A# b

*Uses only white piano keys except for one note

**Uses only white piano keys

#190 Major 3omit 6- 7omit

KUMOI #4

5-Tones



Intervals: $1-1\frac{1}{2}-1$ - $\frac{1}{2}-2$

Formula: (11) - (x-4)

Modal Series Scale Point Tone: MS 5-I:4

Backward: #181 Semitonal Pentatonic #3

Backward MS:SPT: MS 5-II:3

Alternate Symbols:

- #1 MAJOR 3omit 6- 7omit
- #1 Major 3omit 6omit 7-
- #47 Harmonic minor 3omit 7omit
- #48 Ptolemy's 3omit 6- 6omit
- #49 Natural minor 3omit 7omit
- #60 Harmonic minor 3omit 7omit
- #61 Hindustan 3omit 7omit

Alternate Names:

- KUMOI #4
- Ritsusen (Japan)

Altered:

- | | | | | | |
|--------|-----|------|----------------|---|--------------------------|
| 6-Tone | ... | #91 | Armenian | = | Kumoi #4: 7 |
| | | #93 | Glinka's | = | Kumoi #4: 3- |
| 7-Tone | ... | #47 | Harmonic minor | = | Kumoi #4: 3- 7 |
| | | #48 | Ptolemy's | = | Kumoi #4: 3- 6 6+ |
| | | #49 | Natural minor | = | Kumoi #4: 3- 7- |
| | | #60 | Harmonic-Major | = | Kumoi #4: 3 7 |
| | | #61 | Hindustan | = | Kumoi #4: 3 7- |
| 8-Tone | ... | #106 | Phrygian 8-#1 | = | Kumoi #4: 2- 2 3- 7- |
| | | #122 | Aeolian 8-T #1 | = | Kumoi #4: 3- 3 7- |
| | | #127 | Arabic | = | Kumoi #4: 3- 6 6+ 7 |
| | | #128 | Aeolian 8-T #2 | = | Kumoi #4: 3- 6 6+ 7- |
| | | #129 | Isfahan | = | Kumoi #4: 3- 7- 7 |
| | | #135 | Magon Abot | = | Km.#4: low 7, high 3- 7- |

(cont'd)

#190 Major 3om 6- 7om (cont'd) KUMOI #4 (cont'd)

5-Tones

Altered (cont'd):

9-Tone ... #138 Locrian 9-Tone = Km.#4: 2- 2 3- 5- 5 7-
 #139 Phrygian 9-Tn = Km.#4: 2- 2 3- 6 6+ 7-
 #144 Aeolian 9-Tone = Km.#4: 3- 3 6 6+ 7-

Ethnic Uses:

Australian Aborigines
 Japan

Source:

Colin, page 309

*C D F G A \flat c
 D \flat E \flat F \sharp G \sharp A d \flat
 *D E G A B \flat d
 E \flat F G \sharp A \sharp B e \flat
 *E F \sharp A B C e
 F G B \flat C D \flat f
 F \sharp G \sharp B D \sharp D f \sharp
 *G A C D E \flat g
 A \flat B \flat C \sharp D \sharp E a \flat
 **A B D E F a
 B \flat C E \flat F G \flat b \flat
 B C \sharp E F \sharp G b

*Uses only white piano keys except for one note

**Uses only white piano keys

#191 Major 3omit 6omit 7-

PENTATONIC #4

5-Tones



Intervals: $1-1\frac{1}{2}-1$ - $1\frac{1}{2}-1$

Formula: (11) - (x-10)

Modal Series Scale Point Tone: MS 5-V:4

Backward: #191 Pentatonic #4 (Same Scale)

Backward MS:SPT: MS 5-V:4 (Same MS:SPT)

Alternate Symbols:

- #1 Major 3omit 6+ 7omit
- #1 MAJOR 3omit 6omit 7-
- #1 Major 3omit 7omit 6+
- #49 Natural minor 3omit 6omit
- #50 Dorian 3omit 6omit
- #61 Hindustan 3omit 6omit
- #62 Mixolydian 3omit 6omit

Alternate Names:

- Anhemitonic Pentatonic
- A \flat Mode, Pentatonic
- G Mode, Pentatonic
- G \sharp Mode, Pentatonic
- A \flat Pentatonic
- G Pentatonic
- G \sharp Pentatonic
- Chinese
- Ichitsu, Ryosen (Japan)
- Japanese Names:
 - Ichitsu, Ryosen
 - Oshiki, Ritsusen
 - Ryo Scale #1, Sho Mode
 - Taishikicho (on E), Ritsu Scale
 - Yo Scale, Ascending
- Kung #2, Shang Mode (China)

(cont'd)

Alternate Names (cont'd):

Mode 4, Pentatonic
 Oshiki, Ritsusen (Japan)
 Pentatonic A \flat Mode
 Pentatonic G Mode
 Pentatonic G \sharp Mode
 PENTATONIC #4
 Pentatonic, Mode 4
 Ritsu Scale, Taishikicho (on E) (Japan)
 Ryo Scale #1, Sho Mode (Japan)
 Shang 5-Tone (China)
 Shang, Kung #2 (China)
 Sho, Ryo #1
 Slendro, Sanga Mode (Java)
 Taishikicho, Ritsu Scale (on E) (Japan)
 Tanabe's Hard Scale, Ascending
 Tonal Pentatonic #4
 Yo Scale, Ascending (Japan)

Altered:

6-Tone	...	#92	Greek	=	Pentatonic #4: 3-
		#95	Appalachian	=	Pentatonic #4: 6
		#102	Mixolydian 6-T	=	Pentatonic #4: 3
7-Tone	...	#49	Natural minor	=	Pentatonic #4: 3- 6-
		#50	Dorian	=	Pentatonic #4: 3- 6
		#61	Hindustan	=	Pentatonic #4: 3 6-
8-Tone	...	#62	Mixolydian	=	Pentatonic #4: 3 6
		#106	Phrygian 8-#1	=	Pent #4: 2- 2 3- 6-
		#122	Aeolian 8-#1	=	Pent #4: 3- 3 6-
		#123	Dorian 8-#1	=	Pent #4: 3- 3 6
		#128	Aeolian 8-#2	=	Pent #4: 3- 6- 6
		#129	Isfahan	=	Pent #4: 3- 6- 7 7+
		#130	Dorian 8-T #2	=	Pent #4: 3- 6 7 7+
		#133	Hindu	=	Pent #4: 3 5- 5 6
		#135	Magon Abot	=	Pt #4: low 7+, high 3- 6- 7
		#136	Mixolydian 8-T	=	Pent #4: 3 6 7 7+

(cont'd)

#191 Major 3om 6om 7- (cont'd) PENTATONIC #4 (cont'd)

5-Tones

Altered (cont'd):

9-Tone	...	#138	Locrian 9-Tn	=	Pent #4: 2- 2 3- 5- 5 6-
		#139	Phrygian 9-Tn	=	Pent #4: 2- 2 3- 6- 6
		#144	Aeolian 9-Tn	=	Pent #4: 3- 3 6- 6
		#145	Dorian 9-Tn	=	Pent #4: 3- 3 6 7 7+
		#146	Armenian	=	Pent #4: 3- 6 9- 10-
		#147	Ryo 9-Tone	=	Pent #4: 3 4 4+ 6 7 7+
		#149	Adonai Malakh	=	P.#4: low 6 7+, high 3 6 7
10-Tone	...	#152	Russian Litg.	=	Pent #4: 3 6 9 10- 11

Ethnic Uses:

American Indians (Northern)
 Appalachian Mts., Southern (USA)
 Black Africa
 China
 Egypt
 India (Hindu)
 India, Descending with #189, Ascending
 Japan
 Java
 Scotland
 Slovakia

Source:

Vincent, page 169

*C D F G B \flat c
 D \flat E \flat G \flat A \flat B d \flat
 **D E G A C d
 E \flat F A \flat B \flat D \flat e \flat
 *E F \sharp A B D e
 *F G B \flat C E \flat f
 F \sharp G \sharp B C \sharp E f \sharp
 **G A C D F g
 ***A \flat B \flat D \flat E \flat G \flat a \flat
 **A B D E G a
 B \flat C E \flat F A \flat b \flat
 B C \sharp E F \sharp A b

*Uses only white piano keys except for one note

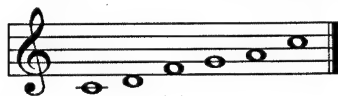
**Uses only white piano keys

***Uses only (and all) black piano keys

#192 Major 3omit 7omit

PENTATONIC #1

5-Tones



Intervals: 1-1½-1 - 1-1½

Formula: (11) - (x-7)

Modal Series Scale Point Tone: MS 5-V:1

Backward: #164 Pentatonic #2

Backward MS:SPT: MS 5-V:2

Alternate Symbols:

- #1 MAJOR 3omit 7omit
- #34 Melodic minor 3omit 7omit
- #50 Dorian 3omit 7omit
- #62 Mixolydian 3omit 7omit

Alternate Names:

- Anhemitonic Pentatonic
- Banshikicho, Ritsu on B (Japan)
- Chi, Ryo #3 (Japan)
- Chih, Kung #4 (China)
- C Mode, Pentatonic
- C# Mode, Pentatonic
- D♭ Mode, Pentatonic
- C Pentatonic
- C# Pentatonic
- D♭ Pentatonic
- Hyojo, Ritsu Scale on E (Japan)
- Hyojo, Ritsusen (Japan)
- Japanese Names:
 - Hyojo, Ritsusen
 - Ritsu Scale:
 - Banshikicho (on B)
 - Hyojo (on E)
 - Oshikicho (on A)
 - Ritsusen -- Hyojo
 - Ryo #3, Chi Mode

(cont'd)

Alternate Names (cont'd):

Japanese Names (cont'd):

Ryo #3, Sojo (on G)

Ryosen -- Suijo

Sojo (Ryo #3 on G)

Suijo, ryosen

Yo Scale, Descending-Inverted

Jazz Scale against Major 7th

Jazz Scale against minor 7th

Jazz Scale against Dominant 7th

Korean Names:

P'yongjo (on B♭)

Ujo (on E♭)

Kung #4, Chih Mode (China)

Major Pentatonic

Mode 1, Pentatonic

Oshikicho, Ritsu Scale on A (Japan)

Pentatonic C Mode

Pentatonic C# Mode

Pentatonic D♭ Mode

PENTATONIC #1

Pentatonic-Major

Pentatonic Mode 1

P'yongjo (on B♭) (Korea)

Ritsu Scale (Japan):

on A: Oshikicho

on B: Banshikicho

on E: Hyojo

Ritsusen -- Hyojo

Ryo #3, Chi Mode (Japan)

Ryo #3, Sojo (on G) (Japan)

Ryosen -- Suijo

Sojo, Ryo #3 (on G) (Japan)

Suijo, Ryosen (Japan)

Tanabe's Hard Scale, Descending-Inverted

Tonal Pentatonic #1

Tsukushi goto (on E)

(cont'd)

Alternate Names (cont'd):Ujo (on E \flat) (Korea)

Yo Scale, Descending-Inverted

Altered:

6-Tone	...	#86	Ionian 6-Tn	=	Pentatonic #1: 7
		#94	Hungarian	=	Pentatonic #1: 3-
		#95	Appalachian	=	Pentatonic #1: 7-
		#103	Guido's	=	Pentatonic #1: 3
7-Tone	...	#1	Major	=	Pentatonic #1: 3 7
		#34	Melodic minor	=	Pentatonic #1: 3- 7
		#50	Dorian	=	Pentatonic #1: 3- 7-
		#62	Mixolydian	=	Pentatonic #1: 3 7-
8-Tone	...	#104	Hindu	=	Pent #1: 2- 2 3 7
		#123	Dorian 8-T #1	=	Pent #1: 3- 3 7-
		#127	Arabic	=	Pent #1: 3- 6- 6 7
		#128	Aeolian 8-#2	=	Pent #1: 3- 6- 6 7-
		#130	Dorian 8-T #2	=	Pent #1: 3- 7- 7
		#131	Ryo 8-Tone	=	Pent #1: 3 4 4+ 7
		#133	Hindu	=	Pent #1: 3 5- 5 7-
9-Tone	...	#136	Mixolydian 8-T	=	Pent #1: 3 7- 7
		#139	Phrygian 9-Tn	=	Pent#1: 2- 2 3- 6- 6 7-
		#140	Hindu	=	Pent #1: 2- 2 3 4 4+ 7
		#143	Bartok's 9-Tn	=	Pent #1: 3- 3 5- 5 7
		#144	Aeolian 9-Tn	=	Pent #1: 3- 3 6- 6 7-
		#145	Dorian 9-Tone	=	Pent #1: 3- 3 7- 7
		#146	Armenian	=	Pent #1: 3- 7- 9- 10-
10-Tone	...	#147	Ryo 9-Tone	=	Pent #1: 3 4 4+ 7- 7
		#149	Adonai Malakh	=	Pt #1: low 6 7, high 3 7-
		#152	Russian Litg.	=	Pent #1: 3 7- 9 10- 11

Ethnic Uses:

American Indians

Appalachian Mts., Southern (USA)

Black Africa

Bulgaria (Central)

Celts

(cont'd)

#192 Major 3om 7om (cont'd)

PENTATONIC #1 (cont'd)

5-Tones

Ethnic Uses (cont'd):

China
 India
 Japan
 Korea
 Poland
 Polynesia
 Scotland

Source:

Colin, page 311

**C D F G A c
 ***Db Eb Gb Ab Bb db
 **D E G A B d
 Eb F Ab Bb C eb
 E F# A B C# e
 *F G Bb C D f
 Gb Ab B Db Eb gb
 **G A C D E g
 Ab Bb Db Eb F ab
 *A B D E F# a
 Bb C Eb F G bb
 B C# E F# G# b

*Uses only white piano keys except for one note

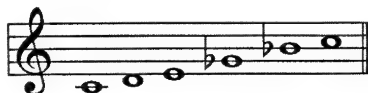
**Uses only white piano keys

***Uses only (and all) black piano keys

#193 Major 4omit 5- 6omit 7-

JAZZ PENTATONIC

5-Tones



Intervals: 1-1-1 - 2-1

Formula: W - (x-14)

Modal Series Scale Point Tone: MS 5-XVI:1

Backward: --- [Major 3om 4om 5- 6- 7-;(n)-(x-6)]

Backward MS:SPT: ---

Alternate Symbols:

- #1 MAJOR 4omit 5- 6omit 7-
- #1 Major 4+ 5omit 6+ 7omit
- #1 Major 5+ 5omit 6omit 7-
- #1 Major 4omit 6omit 5- 7-
- #1 Major 5omit 6omit 4+ 7-
- #1 Major 5omit 7omit 4+ 6+
- #54 Lydian-minor 5omit 6omit
- #55 Overtone 5omit 6omit
- #57 Locrian-Major 4omit 6omit
- #58 Zenkla 4omit 6omit

Alternate Names:

JAZZ PENTATONIC

Jazz Scale

C D E F# A# c
 D# Eb F G B db
 D E F# G# C d
 Eb F G A Db eb
 E F# G# A# D e
 *F G A B Eb f
 F# G# A# C E f#
 *G A B C# F g
 Ab Bb C D Gb ab
 A B C# D# G a
 Bb C D E Ab bb
 B C# D# F A b

Altered:

- | | | | | | |
|--------|-----|------|---------------|---|------------------------|
| 6-Tone | ... | #98 | Prometheus | = | Jazz Pent. 6 |
| 7-Tone | ... | #54 | Lydian-minor | = | Jazz Pent. 5 5+ 6- |
| | | #55 | Overtone | = | Jazz Pent. 5 5+ 6 |
| | | #57 | Locrian-Major | = | Jazz Pent. 4 6- |
| | | #58 | Zenkla | = | Jazz Pent. 4 6 |
| 8-Tone | ... | #133 | Hindu | = | Jazz Pent. 4 5 5+ 6 |
| 9-Tone | ... | #147 | Ryo 9-Tone | = | Jz. Pnt. 4 5 5+ 6 7 7+ |

Ethnic Uses: ---

*Uses only white piano
 keys except for one note

Source:
 Reeves, page 235

#194 Major 4omit 6omit

INDIA

5-Tones



Intervals: 1-1-1½ - 2-½

Formula: (9) - (x-13)

Modal Series Scale Point Tone: MS 5-VIII:3

Backward: --- [Major 2- 3om 5om 6- 7-; (f)-(x-6)]

Backward MS:SPT: MS 5-IX:2

Alternate Symbols:

- #1 MAJOR 4omit 6omit
- #51 Lydian 4omit 6omit
- #60 Harmonic-Major 4omit 6omit

Altered:

- | | | | | | |
|--------|-----|------|----------------|---|---------------------|
| 6-Tone | ... | #96 | Scotch | = | India 6 |
| 7-Tone | ... | #1 | Major | = | India 4 6 |
| | | #51 | Lydian | = | India 4+ 6 |
| | | #60 | Harmonic-Maj. | = | India 4 6- |
| 8-Tone | ... | #131 | Ryo 8-Tone | = | India 4 4+ 6 |
| | | #132 | Hindu | = | India 4+ 6- 6 |
| | | #134 | Bop | = | India 4 6- 6 |
| | | #136 | Mixolydian 8-T | = | India 4 6 6+ |
| 9-Tone | ... | #143 | Bartok's 9-Tn | = | India 3- 3 4 5- 5 6 |
| | | #147 | Ryo 9-Tone | = | India 4 4+ 6 6+ |

Ethnic Uses:

Czechoslovakia
India

Source:

Coryell, page 126

**C D E G B c
 Db Eb F Ab C db
 D E F# A C# d
 Eb F G Bb D eb
 E F# G# B D# e
 **F G A C E f
 Gb Ab Bb Db F gb
 *G A B D F# g
 Ab Bb C Eb G ab
 A B C# E G# a
 *Bb C D F A bb
 B C# D# F# A# b

*Uses only white piano keys except for one note

**Uses only white piano keys

#195 Major 4omit 6- 7omit

JAPANESE PENTATONIC #1

5-Tones



Intervals: 1-1-1½ - ½-2

Formula: (9) - (x-4)

Modal Series Scale Point Tone: MS 5-VI:1

Backward: --- [Major 2om 5om 6- 6-; (v) - (x-6)]

Backward MS:SPT: ---

Alternate Symbols:

#1 MAJOR 4omit 6- 7omit

#1 Major 4omit 7omit 6-

#54 Lydian-minor 4omit 7omit

#60 Harmonic-Major 4omit 7omit

#61 Hindustan 4omit 7omit

Alternate Names:

Hirajoshi, 2nd Special Tuning

JAPANESE PENTATONIC #1

2nd Special Tuning of Hirajoshi

Altered:

7-Tone ... #54 Lydian-minor = Jap.Pent.#1: 4+ 7-

#60 Harmonic-Major = Jap.Pent.#1: 4 7

#61 Hindustan = Jap.Pent.#1: 4 7-

8-Tone ... #122 Aeolian 8-Tn #1 = Jap.Pent.#1: 3- 3 4 7-

9-Tone ... #144 Aeolian 9-Tn = J.Pt.#1: 3- 3 4 6 6+ 7

*C D E G A \flat c
 D \flat E \flat F G \sharp A d \flat
 D E F \sharp A B \flat d
 E \flat F G A \sharp B e \flat
 E F \sharp G \sharp B C e
 *F G A C D \flat f
 F \sharp G \sharp A \sharp C \sharp D f \sharp
 *G A B D E \flat g
 A \flat B \flat C D \sharp E a \flat
 *A B C \sharp E F a
 B \flat C D F G \flat b \flat
 B C \sharp D \sharp F \sharp G b

Ethnic Uses:

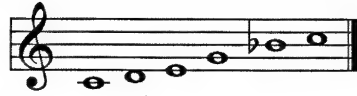
Japan

*Uses only piano keys except for one note

#196 Major 4omit 6omit 7-

AFRICAN

5-Tones



Intervals: 1-1-1½ - 1½-1

Formula: (9) - (x-10)

Modal Series Scale Point Tone: MS 5-VII:4

Backward: --- [Major 3om 5om 6- 7-; (12)-(x-6)]

Backward MS:SPT: MS 5-VII:5

Alternate Symbols:

- #1 MAJOR 4omit 6omit 7-
- #54 Lydian-minor 4omit 6omit
- #55 Overtone 4omit 6omit
- #61 Hindustan 4omit 6omit
- #62 Mixolydian 4omit 6omit

Alternate Names:

African
 Anhemitonic Pentatonic
 Dominant Pentatonic
 Jazz Scale with minor 7th
 Jazz Pentatonic

*C D E G B♭ c
 D♭ E♭ F A♭ B d♭
 *D E F♯ A C d
 E♭ F G B♭ D♭ e♭
 E F♯ G♯ B D e
 *F G A C E♭ f
 G♭ A♭ B♭ D♭ E g♭
 **G A B D F g
 A♭ B♭ C E♭ G♭ a♭
 *A B C♯ E G a
 B♭ C D F A♭ b♭
 B C♯ D♯ F♯ A b

Altered:

6-Tone	...	#100	Scotch	=	African 6
		#102	Mixolydian 6-Tn	=	African 4
7-Tone	...	#54	Lydian-minor	=	African 4+ 6-
		#55	Overtone	=	African 4+ 6
		#61	Hindustan	=	African 4 6-
		#62	Mixolydian	=	African 4 6
8-Tone	...	#136	Mixolydian 8-Tn	=	African 4 6 7 7+
9-Tone	...	#144	Aeolian 9-Tn	=	African 3- 3 4 6- 6
		#147	Ryo 9-Tone	=	African 4 4+ 6 7 7+

Ethnic Uses:

Black Africa

*Uses only white piano
 keys except for one note

**Uses only white piano keys

Source:

Nketia, page 118

#197 Major 4omit 7omit

PENTATONIC #3

5-Tones



Intervals: 1-1-1½ - 1-1½
└───┘ └───┘

Formula: (9) - (x-7)

Modal Series Scale Point Tone: MS 5-V:3

Backward: #158 Pentatonic #5

Backward MS:SPT: MS 5-V:5

Alternate Symbols:

- #1 MAJOR 4omit 7omit
- #51 Lydian 4omit 7omit
- #55 Overtone 4omit 7omit
- #62 Mixolydian 4omit 7omit

Alternate Names:

Anhemitonic Pentatonic
 Banshiki, Ritsusen (Japan)
 Blues Pentatonic
 F Mode, Pentatonic
 F# Mode, Pentatonic
 Gb Mode, Pentatonic
 F Pentatonic
 F# Pentatonic
 Gb Pentatonic
 Ichikosucho, Ryo Scale on D (Japan)
 Japanese Names:

Banshiki, Ritsusen
 Kyu (Ryo #5)
 Ryo #5 (Kyu)
 Ryo Scale (5-Tone):
 Ichikosucho (on D)
 Sojo (on G)
 Suicho (on A)
 Taishikicho (on E)
 Ritsusen -- Banshiki
 Ryosen -- Taishiki
 Taishiki -- Ryosen

(cont'd)

Alternate Names (cont'd):

Kung, Kung #1 (China)

Kyu, Ryo #4 (Japan)

Major Pentatonic

Mode 3, Pentatonic

Mongolian

PENTATONIC #3

Pentatonic Major

Pentatonic, Mode 3

Pentatonic F Mode

Pentatonic F# Mode

Pentatonic Gb Mode

Ryo #4 (Kyu) (Japan)

Ryo Scale (Japan):

on A: Suicho

on D: Ichikosucho

on E: Taishikicho

on G: Sojo

Ritsusen -- Banshiki

Ryosen -- Taishiki

Sojo (Ryo Scale on G) (Japan)

Suicho (Ryo Scale on A) (Japan)

Taishikicho (Ryo Scale on E) (Japan)

Tonal Pentatonic #3

Altered:

6-Tone	...	#96	Scotch	=	Pentatonic #3: 7
		#99	Lydian 6-Tone	=	Pentatonic #3: 4+
		#100	Scotch	=	Pentatonic #3: 7-
		#103	Guido's	=	Pentatonic #3: 4
7-Tone	...	#1	Major	=	Pentatonic #3: 4 7
		#51	Lydian	=	Pentatonic #3: 4+ 7
		#55	Overtone	=	Pentatonic #3: 4+ 7-
		#62	Mixolydian	=	Pentatonic #3: 4 7-
8-Tone	...	#104	Hindu	=	Pent.#3: 2- 2 4 7
		#107	Hindu	=	Pent.#3: 2- 2 4+ 7
		#121	Jobim's	=	Pent.#3: 3- 3 4+ 7-
		#123	Dorian 8-Tn #1	=	Pent.#3: 3- 3 4 7
		#131	Ryo 8-Tone	=	Pent.#3: 4 4+ 7

Altered (cont'd):

8-Tone (cont'd)	...	#132 Hindu	=	Pent.#3: 4+ 6- 6 7
		#133 Hindu	=	Pent.#3: 4 4+ 7-
		#136 Mixolydian 8-T	=	Pent.#3: 4 7- 7
9-Tone	...	#140 Hindu	=	Pent.#3: 2- 2 4 4+ 7
		#141 Hindu	=	Pt.#3: 2- 2 4+ 6- 6 7
		#143 Bartok's 9-Tn	=	Pt.#3: 3- 3 4 5- 5 7
		#144 Aeolian 9-Tn	=	Pt.#3: 3- 3 4 6- 6 7-
		#145 Dorian 9-Tone	=	Pt.#3: 3- 3 4 7- 7
		#147 Ryo 9-Tone	=	Pt.#3: 4 4+ 7- 7
10-Tone	...	#149 Adonai Malakh	=	Pt.#3: low 6 7,high 4 7-
		#152 Russian Litg.	=	Pt.#3: 4 7- 9 10- 11

Ethnic Uses:

African-American Slaves
 American Indians (North)
 Appalachian Mts., Southern (USA)
 Black Africa
 Borneo
 Bulgaria, Central
 China
 India (Hindu)
 Japan
 Korea
 Mayas
 Mexican Indians (general)
 Mongolia
 Roumania
 Scotland
 Slovakia

**C D E G A c
 Db Eb F Ab Bb db
 *D E F# A B d
 Eb F G Bb C eb
 E F# G# B C# e
 **F G A C D f
 ***Gb Ab Bb Db Eb gb
 **G A B D E g
 Ab Bb C Eb F ab
 A B C# E F# a
 *Bb C D F G bb
 B C# D# F# G# b

Used by:

Stephen Foster

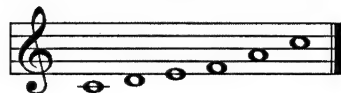
Source:

Vincent, page 169

*Uses only white piano keys except one note

**Uses only white piano keys

***Uses only (and all) black piano keys



Intervals: 1-1- $\frac{1}{2}$ - 2-1 $\frac{1}{2}$

Backward MS:SPT: MS 5-VIII:5

#62 Mixolydian 5omit 7omit

#147 Ryo 9-Tone = African 4 4+ 5 7- 7

B C# D# E G# b

Nketia, page 118

THE GRAND FINALE: Part 7
WESTERN CHROMATIC SCALES
& BLANKS FORMS

This last (seventh) part of The Grand Finale contains the following Chromatic Scales (4 scales) plus 16 blank forms for any scales that you, the reader, find:

#199 Chromatic Harmonic
#200 Chromatic Melodic
#201 Chromatic Melodic Major
#202 Chromatic Melodic minor

Blank Forms

NOTE: The Western Chromatic Scales are not scales in the same sense as the other scales in this book. The Western Chromatic Scales really don't matter, since they are just all of the 12 half-steps of our octave one right after the other. Some of their notation is arbitrary, being given differently in different sources. In fact, I almost left them out of this book entirely. However, "just for the record" they are included here.

#199

CHROMATIC HARMONIC (Western)

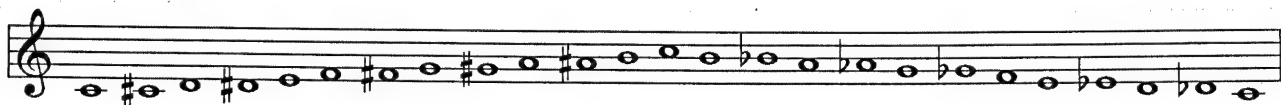
Alternate Names: CHROMATIC HARMONIC
Harmonic Chromatic

Source: Groves Dict. of Music & Musicians, Vol. VII, p. 440

NOTE: Same ascending and descending: All flats except F#
(augmented 4th) instead of G♭

NOTE: This follows the traditional analysis of classical
harmony.

#200

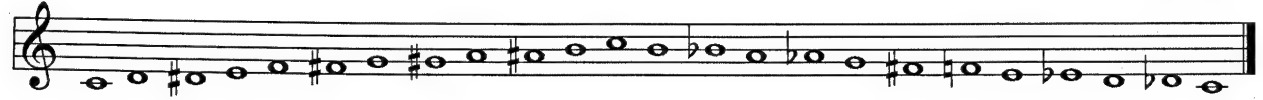
CHROMATIC MELODIC (Western)

Alternate Names: CHROMATIC MELODIC
Melodic Chromatic

Source: Harvard Dict. of Music, p. 753

NOTE: Different ascending and descending: Ascending is all
sharps; descending is all flats

#201

CHROMATIC MELODIC MAJOR

Alternate Names: CHROMATIC MELODIC MAJOR
Melodic Chromatic "Major" Form

Source: Groves' Dict. of Music & Musicians, Vol VII, p. 440

NOTE: All sharps ascending; all flats descending *except* that there is an F# instead of a Gb.

#202

CHROMATIC MELODIC MINOR

Alternate Names: CHROMATIC MELODIC
Melodic Chromatic

Source: Groves' Dict. of Music & Musicians, Vol. VII, p.440

NOTE: All sharps ascending except for an E \flat instead of a D \sharp ; all flats descending except for an F \sharp instead of a G \flat [same as Chrm Harm desc]. Can also be all sharps asc. and all flats desc, the same as #200, the Chromatic Melodic

End of Western Chromatic Scales
Continue for Blank Forms

A blank musical staff with a treble clef. The staff consists of five horizontal lines. The treble clef is positioned at the beginning of the staff, with its hook pointing upwards. The staff is empty, with no notes or other markings.

Formula: _____

Backward: _____

Backward MS:SPT: _____

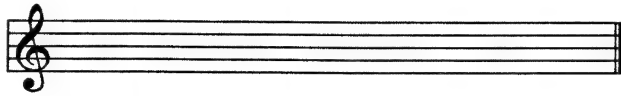
Alternate Symbols: _____

Alternate Names: _____

(cont'd)

[illegible]

-Tones



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

(cont'd)

[illegible]

A blank musical staff with a treble clef. The staff consists of five horizontal lines. The treble clef is positioned at the beginning of the staff, with its hook pointing upwards. The staff is empty, with no notes or other markings.

Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

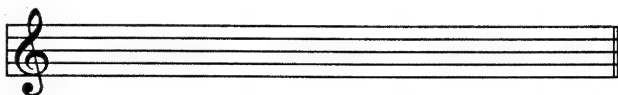
Alternate Symbols: _____

Alternate Names: _____

(cont'd)

#	Major	(cont'd)	Name:	(cont'd)	-Tones
			Altered:		
			Ethnic Uses:		
C			Source:		
D					
E \flat					
E					
F			NOTE:		
F \sharp					
G					
A \flat					
A					
B \flat					
B					

#	Major	NAME:	-Tones
---	-------	-------	--------



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

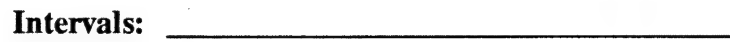
Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

(cont'd)

[illegible]



Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

Alternate Symbols: _____

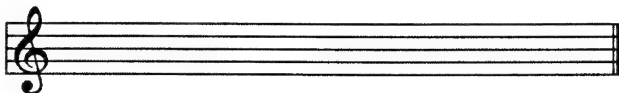
Alternate Names: _____

[illegible]

Major

NAME:

-Tones



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

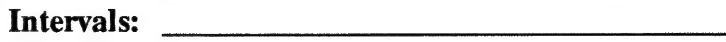
Backward: _____

Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

[illegible]



Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

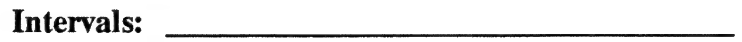
Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

[illegible]

-Tones



Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

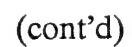
Alternate Symbols: _____

Alternate Names: _____

#	Major	(cont'd)	Name:	(cont'd)	-Tones
Altered: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____					
Ethnic Uses: _____ _____ _____ _____ _____ _____ _____ _____ _____					
C			Source:	_____	
D				_____	
E♭				_____	
E				_____	
F			NOTE:	_____	
F#				_____	
G				_____	
A♭				_____	
A				_____	
B♭				_____	
B				_____	

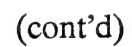
#	Major	(cont'd)	Name:	(cont'd)	-Tones
			Altered:		
			Ethnic Uses:		
C			Source:		
D					
E \flat					
E					
F			NOTE:		
F \sharp					
G					
A \flat					
A					
B \flat					
B					

-Tones



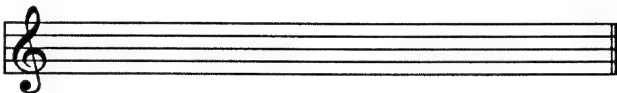
[illegible]

-Tones



[illegible]

-Tones



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

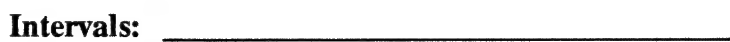
Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

[illegible]

-Tones



Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

Alternate Symbols: _____

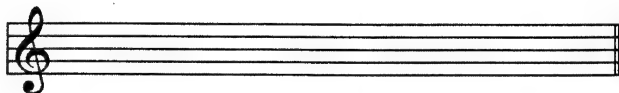
Alternate Names: _____

(cont'd)

[illegible]

NAME:

-Tones



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

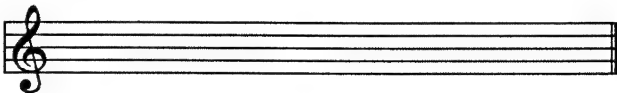
Alternate Symbols: _____

[illegible]

Alternate Names: _____

[illegible]

-Tones



Intervals: _____

Formula: _____

Modal Series Scales Point Tone: _____

Backward: _____

Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

#	Major	(cont'd)	Name:	(cont'd)	-Tones
---	-------	----------	-------	----------	--------

Altered: _____

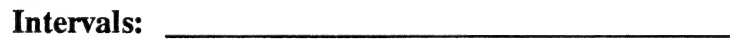
Ethnic Uses: _____

Source: _____

NOTE: _____

C
D
E \flat
E
F
F \sharp
G
A \flat
A
B \flat
B

-Tones



Modal Series Scales Point Tone: _____

Backward MS:SPT: _____

Alternate Symbols: _____

Alternate Names: _____

[illegible]

SECTION H

THE REST OF IT

OR

UNINTERESTING NECESSITIES

CONTENTS OF SECTION H

Chapter #30:	180 Scales in 12 Different Keys	Page 753
Chapter #31:	Sources of Individual Scales, Bibliography	789
Chapter #32:	Glossary, Chart Index, Scale Name Index, Index	801

CHAPTER 30

SHOWING 180 DIFFERENT SCALES, EACH IN 12 KEYS

CONTENTS OF CHAPTER 30:

A Word of Explanation	Page 755
Chart #101: 180 Scales by Letters in 12 Keys Each	757
Chart #102: Scales in Different Keys That Use Only the White Keys of the Piano	785
Chart #103: The Pentatonic Modes Using Only & All of the Black Keys of the Piano	788

A WORD OF EXPLANATION

Originally this book did not show the scales in any key except the Key of C. However, my piano/guitar playing son all but insisted that I add this chapter. He said that showing the scales in all of the keys would be a great help to the student of music who actually wanted to play the scales, not just look at them. So this chapter has 180 of the scales of this book shown in 12 different keys each (labeled Chart #101). Also, the 12 keys are shown at the end of each of the 180 scales in The Grand Finale, which starts on page 405.

There are only 180 of my 198 scales in this chapter, because Combination Scales (page 124) and scales that differ above or below the octave (page 125) are not included here.

As you will notice, many of the scales use all or almost all of the white keys on the piano in one key but will have several sharps and/or flats in the other keys. Of course, the scales with one or no accidentals would be much easier to play on the piano. For this reason, I have marked these scales. Therefore, in Chart #101, you will find some of the scales with one, two, or three asterisks (*, **, or ***).

The scales with only one accidental (sharp or flat) are marked by one asterisk (*). That means that these scales can be played on only white piano keys except for one note which will be played on a black piano key.

Of course, the 7-Tone Scales that make up the Diatonic Modes, can be played on nothing but the white keys, which is convenient. (For more about the Diatonic Modes, see Section F, which starts on page 345.) However, there are also some other scales, 6-Tone Scales and 5-Tone Scales, that are played, in one of their keys, entirely on the white keys (only) on the piano. These scales that can be played entirely on white piano keys are marked with two asterisks (**) and are also listed on Chart #102 on page 785 at the end of this chapter.

In addition, the well known Pentatonic Modes can be played on all of (and only) the black keys of the piano, which is handy. These are marked with three asterisks (***) and are listed separately in the little chart, Chart #103, on page 788, also at the end of this chapter.

The scales in Chart #101 are shown with:

- (1) the NAME of the scale,
- (2) the INTERVALS involved in the scale,
- (3) the SCALE NUMBER (by which the scale can be looked up in The Grand Finale, which starts on page 405), and
- (4) the 12 KEYS.

I was really quite reluctant to do this chapter. One reason was because I can just feel you, the reader, breathing down my neck and saying that G♭ should have been F♯, etc. But I chose sharps and flats so as to use as many different *letter names* in a scale as possible (for instance, using F♯, G, A♭, rather than G♭, G, A♭ or F♯, G, G♯). But I did try to keep the scales as much as possible in either sharps or in flats. However, in a key with otherwise all sharps, I might use A♭ rather than G♯, because I figured the average musician would be more familiar A♭. Another objection might be that I would put down, for instance, D♭, E♭, E, G♭, instead of D♭, E♭, F♭, G♭. This is because the less experienced musician might be confused on the piano with having to remember that that F♭ is really just an E. Also, I usually used the key of D♭ instead of C♯, even if the rest of the key is in sharps, because I'm sure the key of D♭ would be easier for the most people than the key of C♯.

Yet another objection that might be raised is that the different keys do not follow the Circle of Fifths. I have purposely put the keys alphabetically, because the Circle of Fifths might confuse the musician who has had less formal training. And remember that this book is written for anyone with an interest in scales, not just for the accomplished musician.

180 DIFFERENT SCALES BY LETTERS, IN 12 KEYS EACH

CHART #101

7-TONE SCALES:

#1 MAJOR (Ionian)

1 - 1- $\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$
 **C D E F G A B c
 D \flat E \flat F G \flat A \flat B \flat C d \flat
 D E F \sharp G A B C \sharp d
 E \flat F G A \flat B \flat C D e \flat
 E F \sharp G \sharp A B C \sharp D \sharp e
 *F G A B \flat C D E f
 F \sharp G \sharp A \sharp B C \sharp D \sharp F f \sharp
 *G A B C D E F \sharp g
 A \flat B \flat C D \flat E \flat F G a \flat
 A B C \sharp D E F \sharp G \sharp a
 B \flat C D E \flat F G A b \flat
 B C \sharp D \sharp E F \sharp G \sharp A \sharp b

#2 ANANDA

$\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$
 C D \flat E F G A B c
 D \flat D F G \flat A \flat B \flat C d \flat
 D E \flat F \sharp G A B C \sharp d
 E \flat E G A \flat B \flat C D e \flat
 E F G \sharp A B C \sharp D \sharp e
 F G \flat A B \flat C D E f
 F \sharp G A \sharp B C \sharp D \sharp F f \sharp
 G A \flat B C D E F \sharp g
 A \flat A C D \flat E \flat F G a \flat
 A B \flat C \sharp D E F \sharp G \sharp a
 B \flat B D E \flat F G A b \flat
 B C D \sharp E F \sharp G \sharp A \sharp b

#3 CHROMATIC MIXOLYDIAN

$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1
 C D \flat D F G \flat G B \flat c
 D \flat D E \flat G \flat G A \flat B d \flat
 D D \sharp E G G \sharp A C d
 E \flat E F A \flat A B \flat D e \flat
 E F G \flat A B \flat B D e
 F F \sharp G A \sharp B C D \sharp f
 G \flat G A \flat B C D \flat E g \flat
 G A \flat A C D \flat D F g
 A \flat A B \flat C \sharp D E \flat F \sharp a \flat
 A A \sharp B D D \sharp E G a
 B \flat B C D \sharp E F A \flat b \flat
 B C D \flat E F G \flat A b

#4 CHROMATIC DORIAN

$\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
 C D \flat D F G A \flat A c
 D \flat D E \flat F \sharp G \sharp A B \flat d \flat
 D E \flat E G A A \flat B C d
 E \flat E F A \flat B \flat B C e \flat
 E F G \flat A B C D \flat e
 F G \flat G B \flat C D \flat D f
 G \flat G A \flat B C \sharp D E \flat g \flat
 G A \flat A C D E \flat E g
 A \flat A B \flat D \flat E \flat E F a \flat
 A A \sharp B D E F F \sharp a
 B \flat B C E \flat F G \flat G b \flat
 B C D \flat E F \sharp G A \flat b

#6 NEAPOLITAN-MAJOR

$\frac{1}{2}$ - 1- 1- 1- 1- 1- $\frac{1}{2}$
 C D \flat E \flat F G A B c
 D \flat D E F \sharp G \sharp A \sharp C d \flat
 D E \flat F G A B C \sharp d
 E \flat E G \flat A \flat B \flat C D e \flat
 E F G A B C \sharp D \sharp e
 F G \flat A \flat B \flat C D E f
 F \sharp G A B C \sharp D \sharp F f \sharp
 G A \flat B \flat C D E F \sharp g
 A \flat A B D \flat E \flat F G a \flat
 A B \flat C D E F \sharp G \sharp a
 B \flat B D \flat E \flat F G A b \flat
 B C D E F \sharp G \sharp A \sharp b

#8 SUPER-LOCRIAN

$\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- 1- 1- 1
 C D \flat E \flat E G \flat A \flat B \flat c
 *D \flat D E F G A B d \flat
 D E \flat F G \flat A \flat B \flat C d
 E \flat E F \sharp G A B D \flat e \flat
 E F G A \flat B \flat C D e
 F G \flat A \flat A B D \flat E \flat f
 F \sharp G A B \flat C D E f \sharp
 G A \flat B \flat B D \flat E \flat F g
 A \flat A B C D E G \flat a \flat
 A B \flat C D \flat E \flat F G a
 B \flat B C \sharp D E F \sharp A \flat b \flat
 *B C D E \flat F G A b

*Uses only white keys on piano except for one note

**Uses only (and all) white keys on piano, see page 785

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#9 CHROMATIC HYPOPHYRYGIAN

$1\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$
 C D \sharp F F \sharp G A \sharp B c
 D \flat E F \sharp G A \flat B C d \flat
 D F G A \flat A C D \flat d
 E \flat F \sharp G \sharp A B \flat C \sharp D e \flat
 E G A B \flat B D E \flat e
 F G \sharp A \sharp B C D \sharp E f
 G \flat A B C D \flat E F g \flat
 G B \flat C D \flat D F F \sharp g
 A \flat B C \sharp D E \flat F \sharp G a \flat
 A C D E \flat E G A \flat a
 B \flat C \sharp D \sharp E F G \sharp A b \flat
 B D E F G \flat A B \flat b

#11 BYZANTINE

$\frac{1}{2}$ - 1- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1
 C D \flat E \flat E G A \flat B \flat c
 C \sharp D E F G \sharp A B c \sharp
 D E \flat F G \flat A B \flat C d
 E \flat E F \sharp G A \sharp B D \flat e \flat
 *E F G A \flat B C D e
 F G \flat A \flat A C D \flat E \flat f
 F \sharp G A B \flat C \sharp D E f \sharp
 G A \flat B \flat B D E \flat F g
 A \flat A B C D \sharp E F \sharp a \flat
 A B \flat C D \flat E F G a
 B \flat B C \sharp D F G \flat A \flat b \flat
 B C D E \flat F \sharp G A b

#13 HIJAZI

$\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \flat E \flat F G \flat A B \flat c
 D \flat D E F \sharp G A \sharp B d \flat
 D E \flat F G A \flat B C d
 E \flat E F \sharp G \sharp A C D \flat e \flat
 E F G A B \flat C \sharp D e
 F G \flat A \flat B \flat B D E \flat f
 F \sharp G A B C D \sharp E f \sharp
 G A \flat B \flat C D \flat E F g
 A \flat A B C \sharp D F G \flat a \flat
 A B \flat C D E \flat F \sharp G a
 B \flat B C \sharp D \sharp E G A \flat b \flat
 *B C D E F G \sharp A b

#10 RAGA TODI

$\frac{1}{2}$ -1- $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E \flat F \sharp G A \flat B c
 D \flat D E G A \flat A C d \flat
 D E \flat F G \sharp A B \flat C \sharp d
 E \flat E F \sharp A B \flat B D e \flat
 E F G A \sharp B C D \sharp e
 F G \flat A \flat B C D \flat E f
 G \flat G A C D \flat D F g \flat
 G A \flat B \flat C \sharp D E \flat F \sharp g
 A \flat A B D E \flat E G a \flat
 A B \flat C D \sharp E F G \sharp a
 B \flat B D \flat E F G \flat A b \flat
 B C D F F \sharp G A \sharp b

#12 LOCRIAN

$\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - 1- 1- 1
 C D \flat E \flat F G \flat A \flat B \flat c
 C \sharp D E F \sharp G A B c \sharp
 D E \flat F G A \flat B \flat C d
 D \sharp E F \sharp G \sharp A B C \sharp d \sharp
 *E F G A B \flat C D e
 F G \flat A \flat B \flat B D \flat E \flat f
 *F \sharp G A B C D E f \sharp
 G A \flat B \flat C D \flat E \flat F g
 A \flat A B C \sharp D E F \sharp a \flat
 A B \flat C D E \flat F G a
 B \flat B C \sharp D \sharp E F \sharp G \sharp b \flat
 **B C D E F G A b

#14 NEAPOLITAN-MINOR

$\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E \flat F G A \flat B c
 D \flat D E F \sharp G \sharp A C d \flat
 D E \flat F G A B \flat C \sharp d
 E \flat E F \sharp G \sharp A \sharp B D e \flat
 *E F G A B C D \sharp e
 F G \flat A \flat B \flat C D \flat E f
 F \sharp G A B C \sharp D F g \sharp
 G A \flat B \flat C D E \flat F \sharp g
 A \flat A B C \sharp D \sharp E F a \flat
 A B \flat C D E F A \flat a
 B \flat B D \flat E \flat F G \flat A b \flat
 B C D E F \sharp G A \sharp b

*Uses only white keys on piano except for one note

**Uses only (and all) keys on piano

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#15 PHRYGIAN

$\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - 1- 1
 C D \flat E \flat F G A \flat B \flat c
 D \flat D E F \sharp G \sharp A B d \flat
 D E \flat F G A B \flat C d
 E \flat E G \flat A \flat B \flat B D \flat e \flat
 **E F G A B C D e
 F G \flat A \flat B \flat C D \flat E \flat f
 F \sharp G A B C \sharp D E f \sharp
 G A \flat B \flat C D E \flat F g
 A \flat A B C \sharp D \sharp E G \flat a \flat
 *A B \flat C D E F G a
 B \flat B D \flat E \flat F G \flat A \flat b \flat
 *B C D E F \sharp G A b

#17 MARAVA

$\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- 1- $\frac{1}{2}$
 C D \flat E F \sharp G A B c
 D \flat D F G A \flat B \flat C d \flat
 D E \flat F \sharp G \sharp A B C \sharp d
 E \flat E G A B \flat C D e \flat
 E F G \sharp A \sharp B C \sharp D \sharp e
 *F G \flat A B C D E f
 G \flat G B \flat C D \flat E \flat F g \flat
 G A \flat B C \sharp D E F \sharp g
 A \flat A C D E \flat F G a \flat
 A B \flat C \sharp D \sharp E F \sharp G \sharp a
 *B \flat B D E F G A b \flat
 B C E \flat F G \flat A \flat B \flat b

#19 ENIGMATIC

$\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E F \sharp G \sharp A \sharp B c
 *D \flat D F G A B C d \flat
 D E \flat F \sharp A \flat B \flat C C \sharp d
 E \flat E G A B C \sharp D e \flat
 E F A \flat B \flat C D E \flat e
 F G \flat A B C \sharp D \sharp E f
 F \sharp G A \sharp C D E F f \sharp
 G A \flat B D \flat E \flat F F \sharp g
 A \flat A C D E F \sharp G a \flat
 A B \flat D \flat E \flat F G A \flat a
 B \flat B D E F \sharp G \sharp A b \flat
 B C D \sharp F G A A \sharp b

#16 JAVANESE

$\frac{1}{2}$ - 1- 1- 1- 1- $\frac{1}{2}$ - 1
 C D \flat E \flat F G A B \flat c
 D \flat D E G \flat A \flat B \flat B d \flat
 *D E \flat F G A B C d
 E \flat E G \flat A \flat B \flat C D \flat e \flat
 *E F G A B C \sharp D e
 F G \flat A \flat B \flat C D E \flat f
 F \sharp G A B C \sharp D \sharp E f \sharp
 G A \flat B \flat C D E F g
 A \flat A B D \flat E \flat F G \flat a \flat
 A B \flat C D E F \sharp G a
 B \flat B D \flat E \flat F G A \flat b \flat
 B C D E F \sharp G \sharp A b

#18 BLUES

1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - 1
 C D \sharp E F F \sharp G B \flat c
 D \flat E F G \flat G A \flat B d \flat
 D F F \sharp G G \sharp A C d
 E \flat F \sharp G A \flat A B \flat D \flat e \flat
 E G G \sharp A A \sharp B D e
 F A \flat A B \flat B C E \flat f
 G \flat A B \flat B C D \flat E g \flat
 G A \sharp B C C \sharp D F g
 A \flat B C D \flat D E \flat G \flat a \flat
 A C C \sharp D D \sharp E G a
 B \flat C \sharp D E \flat E F A \flat b \flat
 B D D \sharp E F G \flat A b

#20 CHROMATIC HYPOLYDIAN

$\frac{1}{2}$ -1 $\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E F \sharp G A \flat B c
 D \flat D F G A \flat A C d \flat
 D E \flat F \sharp G \sharp A B \flat C \sharp d
 E \flat E G A B \flat B D e \flat
 E F G \sharp A \sharp B C D \sharp e
 F G \flat A B C D \flat E f
 F \sharp G A \sharp C C \sharp D F f \sharp
 G A \flat B C \sharp D E \flat F \sharp g
 A \flat A C D E \flat E G a \flat
 A B \flat C \sharp D \sharp E F G \sharp a
 B \flat B D E F G \flat A b \flat
 B C D \sharp F F \sharp G A \sharp b

*Uses only white keys on piano except for one note

**Uses only (and all) white keys on piano, see page 785

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#21 INDIA

$\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1
 C D \flat E F \sharp G A B \flat c
 D \flat D F G A \flat B \flat B d \flat
 D E \flat F \sharp G \sharp A B C d
 E \flat E G A B \flat C D \flat e \flat
 E F G \sharp A \sharp B C \sharp D e
 F G \flat A B C D E \flat f
 F \sharp G A \sharp C C \sharp D \sharp E f \sharp
 G A \flat B C \sharp D E F g
 A \flat A C D E \flat F G \flat a \flat
 A B \flat C \sharp D \sharp E F \sharp G a
 B \flat B D E F G A \flat b \flat
 B C D \sharp F F \sharp G \sharp A b

#23 CHROMATIC LYDIAN

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$
 C D \flat E F G \flat A B c
 D \flat D F G \flat G B \flat C d \flat
 D E \flat F \sharp G A \flat B C \sharp d
 E \flat E G A \flat A C D e \flat
 E F G \sharp A B \flat C \sharp D \sharp e
 F G \flat A B \flat B D E f
 F \sharp G A \sharp B C D \sharp F f \sharp
 G A \flat B C D \flat E F \sharp g
 A \flat A C D \flat D F G a \flat
 A B \flat C \sharp D E \flat F \sharp G \sharp a
 B \flat B D E \flat E G A b \flat
 B C D \sharp E F G \sharp A \sharp b

#25 CHROMATIC PHRYGIAN

$1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$
 C D \sharp E F G \sharp A \sharp B c
 D \flat E F G \flat A B C d \flat
 D F F \sharp G A \sharp C C \sharp d
 E \flat F \sharp G A \flat B C \sharp D e \flat
 E G G \sharp A C D D \sharp e
 F G \sharp A B \flat C \sharp D \sharp E f
 G \flat A B \flat B D E F g \flat
 G A \sharp B C D \sharp F F \sharp g
 A \flat B C D \flat E F \sharp G a \flat
 A C C \sharp D F G G \sharp a
 B \flat C \sharp D E \flat F \sharp G \sharp A b \flat
 B D D \sharp E G A A \sharp b

#22 HUNGARIAN-MAJOR

$1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1
 C D \sharp E F \sharp G A B \flat c
 D \flat E F G A \flat B \flat B d \flat
 D F F \sharp G \sharp A B C d
 E \flat F \sharp G A B \flat C D \flat e \flat
 E G A \flat B \flat B C \sharp D e
 F G \sharp A B C D E \flat f
 G \flat A B \flat C D \flat E \flat E g \flat
 G A \sharp B C \sharp D E F g
 A \flat B C D E \flat F G \flat a \flat
 A C C \sharp D \sharp E F \sharp G a
 B \flat C \sharp D E F G A \flat b \flat
 B D E \flat F F \sharp G \sharp A b

#24 ENIGMATIC, DESCENDING-INV.

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E F A \flat B \flat B c
 D \flat D F G \flat A B C d \flat
 D E \flat F \sharp G A \sharp C C \sharp d
 E \flat E G A \flat B C \sharp D e \flat
 E F G \sharp A C D D \sharp e
 F G \flat A B \flat C \sharp D \sharp E f
 G \flat G A \sharp B D E F g \flat
 G A \flat B C E \flat F G \flat g
 A \flat A C D \flat E F \sharp G a \flat
 A B \flat C \sharp D F G G \sharp a
 B \flat B D E \flat F \sharp G \sharp A b \flat
 B C D \sharp E G A A \sharp b

#26 PERSIAN

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $1\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E F G \flat A \flat B c
 D \flat D F G \flat G A C d \flat
 D E \flat F \sharp G A \flat B \flat C \sharp d
 E \flat E G A \flat A B D e \flat
 E F G \sharp A B \flat C D \sharp e
 F G \flat A B \flat B D \flat E f
 F \sharp G A \sharp B C D F f \sharp
 G A \flat B C D \flat E \flat F \sharp g
 A \flat A C D \flat D E G a \flat
 A B \flat C \sharp D E \flat F G \sharp a
 B \flat B D E \flat E G \flat A b \flat
 B C D \sharp E F G A \sharp b

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#27 RAHAWI

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1 - 1
 C D \flat E F G \flat A \flat B \flat c
 D \flat D F G \flat G A B d \flat
 D E \flat F \sharp G A \flat B \flat C d
 E \flat E G A \flat A B D \flat e \flat
 E F G \sharp A B \flat C D e
 F G \flat A B \flat B D \flat E \flat f
 F \sharp G A \sharp B C D E f \sharp
 G A \flat B C D \flat E \flat F g
 A \flat A C D \flat D E G \flat a \flat
 A B \flat C \sharp D E \flat F G a
 B \flat B D E \flat E G \flat A \flat b \flat
 *B C D \sharp E F G A b

#28 ORIENTAL

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \flat E F G \flat A B \flat c
 D \flat D F G \flat G A \sharp B d \flat
 D E \flat F \sharp G A \flat B C d
 E \flat E G A \flat A C D \flat e \flat
 E F G \sharp A B \flat C \sharp D e
 F G \flat A B \flat B D E \flat f
 F \sharp G A \sharp B C D \sharp E f \sharp
 G A \flat B C D \flat E F g
 A \flat A C D \flat D F G \flat a \flat
 A B \flat C \sharp D E \flat F \sharp G a
 B \flat B D E \flat E G A \flat b \flat
 B C D \sharp E F G \sharp A b

#29 PERSIAN

$1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \sharp E F G \sharp A B \flat c
 D \flat E F G \flat A B \flat B d \flat
 D F F \sharp G A \sharp B C d
 E \flat F \sharp G A \flat B C D \flat e \flat
 E G G \sharp A C C \sharp D e
 F G \sharp A B \flat C \sharp D E \flat f
 G \flat A B \flat B D E \flat E g \flat
 G A \sharp B C D \sharp E F g
 A \flat B C D \flat E F G \flat a \flat
 A C C \sharp D F F \sharp G a
 B \flat C \sharp D E \flat F \sharp G A \flat b \flat
 B D D \sharp E G G \sharp A b

#30 DOUBLE HARMONIC

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E F G A \flat B c
 D \flat D F G \flat A \flat A C d \flat
 D E \flat F \sharp G A B \flat C \sharp d
 E \flat E G A \flat B \flat B D e \flat
 E F G \sharp A B C D \sharp e
 F G \flat A B \flat C D \flat E f
 F \sharp G A \sharp B C \sharp D F f \sharp
 G A \flat B C D E \flat F \sharp g
 A \flat A C D \flat E \flat E G a \flat
 A B \flat C \sharp D E F G \sharp a
 B \flat B D E \flat F G \flat A b \flat
 B C D \sharp E F \sharp G A \sharp b

#31 SPANISH

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - 1 - 1
 C D \flat E F G A \flat B \flat c
 D \flat D F G \flat A \flat A B d \flat
 D E \flat F \sharp G A B \flat C d
 E \flat E G A \flat B \flat B D \flat e \flat
 *E F G \sharp A B C D e
 F G \flat A B \flat C D \flat E \flat f
 F \sharp G A \sharp B C \sharp D E f \sharp
 G A \flat B C D E \flat F g
 A \flat A C D \flat E \flat E G \flat a \flat
 A B \flat C \sharp D E F G a
 B \flat B D E \flat F G \flat A \flat b \flat
 B C D \sharp E F \sharp G A b

#32 ROUMANIAN-MAJOR

$1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1 - $\frac{1}{2}$ - 1
 C D \sharp E F G A B \flat c
 D \flat E F G \flat A \flat B \flat B d \flat
 *D F F \sharp G A B C d
 E \flat F \sharp G A \flat B \flat C D \flat e \flat
 E G G \sharp A B C \sharp D e
 F G \sharp A B \flat C D E \flat f
 G \flat A B \flat B C \sharp D \sharp E g \flat
 *G A \sharp B C D E F g
 A \flat B C D \flat E \flat F G \flat a \flat
 A C D \flat D E F \sharp G a
 B \flat C \sharp D E \flat F G A \flat b \flat
 B D D \sharp E F \sharp G \sharp A b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#33 ARABIC

$\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1 - $\frac{1}{2}$ - 1
 C D \flat E F G A B \flat c
 D \flat D F G \flat A \flat B \flat B d \flat
 D E \flat F \sharp G A B C d
 E \flat E G A \flat B \flat C D \flat e \flat
 E F G \sharp A B C \sharp D e
 F G \flat A B \flat C D E \flat f
 F \sharp G A \sharp B C \sharp D \sharp E f \sharp
 *G A \flat B C D E F g
 A \flat A C D \flat E \flat F G \flat a \flat
 A B \flat C \sharp D E F \sharp G a
 B \flat B D E \flat F G A \flat b \flat
 B C D \sharp E F \sharp G \sharp A b

#37 LYDIAN-DIMINISHED

1 - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - 1 - 1 - $\frac{1}{2}$
 C D E \flat F \sharp G A B c
 D \flat E \flat E G A \flat B \flat C d \flat
 D E F G \sharp A B C \sharp d
 E \flat F G \flat A B \flat C D e \flat
 E F \sharp G A \sharp B C \sharp D \sharp e
 *F G A \flat B C D E f
 G \flat A \flat A C D \flat E \flat F g \flat
 G A B \flat C \sharp D E F \sharp g
 A \flat B \flat B D E \flat F G a \flat
 A B C D \sharp E F \sharp G \sharp a
 B \flat C D \flat E F G A b \flat
 B C \sharp D F F \sharp G \sharp A \sharp b

#40 HUNGARIAN-MINOR

1 - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$
 C D E \flat F \sharp G A \flat B c
 D \flat E \flat E G A \flat A C d \flat
 D E F G \sharp A B \flat C \sharp d
 E \flat F G \flat A B \flat B D e \flat
 E F \sharp G A \sharp B C D \sharp e
 F G A \flat B C D \flat E f
 F \sharp G \sharp A C C \sharp D F f \sharp
 G A B \flat C \sharp D E \flat F \sharp g
 A \flat B \flat B D E \flat E G a \flat
 A B C D \sharp E F G \sharp a
 B \flat C D \flat E F G \flat A b \flat
 B C \sharp D F F \sharp G A \sharp b

#34 MELODIC MINOR

1 - $\frac{1}{2}$ - 1 - 1 - 1 - 1 - $\frac{1}{2}$
 *C D E \flat F G A B c
 D \flat E \flat E G \flat A \flat B \flat C d \flat
 *D E F G A B C \sharp d
 E \flat F G \flat A \flat B \flat C D e \flat
 E F \sharp G A B C \sharp D \sharp e
 F G A \flat B \flat C D E f
 G \flat A \flat A B D \flat E \flat F g \flat
 G A B \flat C D E F \sharp g
 A \flat B \flat B D \flat E \flat F G a \flat
 A B C D E F \sharp G \sharp a
 B \flat C D \flat E \flat F G A b \flat
 B C \sharp D E F \sharp G \sharp A \sharp b

#38 CONWAY'S 7-TONE

1 - $\frac{1}{2}$ - 1 - $\frac{1}{2}$ - $\frac{1}{2}$ - 2 - $\frac{1}{2}$
 C D E \flat F F \sharp G B c
 D \flat E \flat E F \sharp G A \flat C d \flat
 D E F G G \sharp A C \sharp d
 E \flat F G \flat A \flat A B \flat D e \flat
 E F \sharp G A A \sharp B D \sharp e
 F G A \flat B \flat B C E f
 G \flat A \flat A B C D \flat F g \flat
 G A B \flat C C \sharp D F \sharp g
 A \flat B \flat B C \sharp D E \flat G a \flat
 A B C D D \sharp E G \sharp a
 B \flat C D \flat E \flat E F A b \flat
 B C \sharp D E F F \sharp A \sharp b

#41 CHROMATIC HYPODORIAN

1 - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $1\frac{1}{2}$
 C D E \flat E G A \flat A c
 D \flat E \flat E F G \sharp A B \flat d \flat
 D E F G \flat A B \flat B d
 E \flat F G \flat G A \sharp B C e \flat
 E F \sharp G A \flat B C D \flat e
 F G A \flat A C D \flat D f
 F \sharp G \sharp A B \flat C \sharp D E \flat f \sharp
 G A B \flat B D E \flat E g
 A \flat B \flat B C D \sharp E F a \flat
 A B C D \flat E F G \flat a
 B \flat C D \flat D F G \flat G b \flat
 B C \sharp D E \flat F \sharp G A \flat b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#42 GREEK

1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1
 C D E \flat F \sharp G A \flat B \flat c
 D \flat E \flat E G A \flat A B d \flat
 D E F G \sharp A B \flat C d
 E \flat F G \flat A B \flat B D \flat e \flat
 E F \sharp G A \sharp B C D e
 F G A \flat B C D \flat E \flat f
 G \flat A \flat A C D \flat D E g \flat
 G A B \flat C \sharp D E \flat F g
 A \flat B \flat B D E \flat E G \flat a \flat
 A B C D \sharp E F G a
 B \flat C D \flat E F G \flat A \flat b \flat
 B C \sharp D F F \sharp G A b

#44 ROUMANIAN-MINOR

1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1
 C D E \flat F \sharp G A B \flat c
 D \flat E \flat E G A \flat B \flat B d \flat
 *D E F G \sharp A B C d
 E \flat F G \flat A B \flat C D \flat e \flat
 E F \sharp G A \sharp B C \sharp D e
 F G A \flat B C D E \flat f
 F \sharp G \sharp A C C \sharp D \sharp E f \sharp
 G A B \flat C \sharp D E F g
 A \flat B \flat B D E \flat F G \flat a \flat
 A B C D \sharp E F \sharp G a
 B \flat C D \flat E F G A \flat b \flat
 B C \sharp D F F \sharp G \sharp A b

#46 ZANGULA

1 - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D E \flat F G \flat A B \flat c
 D \flat E \flat E F \sharp G A \sharp B d \flat
 *D E F G A \flat B C d
 E \flat F G \flat A \flat A C D \flat e \flat
 E F \sharp G A B \flat C \sharp D e
 F G A \flat B \flat B D E \flat f
 F \sharp G \sharp A B C D \sharp E f \sharp
 G A B \flat C D \flat E F g
 A \flat B \flat B C \sharp D F G \flat a \flat
 A B C D E \flat F \sharp G a
 B \flat C D \flat E \flat E G A \flat b \flat
 B C \sharp D E F G \sharp A b

#43 GREEK

1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1
 C D E \flat E G A \flat B \flat c
 D \flat E \flat E F G \sharp A B d \flat
 D E F G \flat A B \flat C d
 E \flat F G \flat G A \sharp B D \flat e \flat
 E F \sharp G A \flat B C D e
 F G A \flat A C D \flat E \flat f
 G \flat A \flat A B \flat C \sharp D E g \flat
 G A B \flat B D E \flat F g
 A \flat B \flat B C D \sharp E G \flat a \flat
 *A B C D \flat E F G a
 B \flat C D \flat D F G \flat A \flat b \flat
 B C \sharp D D \sharp F \sharp G A b

#45 HALF-DIMINISHED

1 - $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- 1- 1
 C D E \flat F G \flat A \flat B \flat c
 D \flat E \flat E F \sharp G A B d \flat
 D E F G A \flat B \flat C d
 E \flat F G \flat A \flat A B D \flat e \flat
 E F \sharp G A B \flat C D e
 F G A \flat B \flat B D \flat E \flat f
 F \sharp G \sharp A B C D E f \sharp
 G A B \flat C D \flat E \flat F g
 A \flat B \flat B C \sharp D E G \flat a \flat
 A B C D E \flat F G a
 B \flat C D \flat E \flat E G \flat A \flat b \flat
 *B C \sharp D E F G A b

#47 HARMONIC MINOR

1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
 C D E \flat F G A \flat B c
 D \flat E \flat E F \sharp G \sharp A C d \flat
 D E F G A B \flat C \sharp d
 E \flat F G \flat A \flat B \flat B D e \flat
 E F \sharp G A B C D \sharp e
 F G A \flat B \flat C D \flat E f
 F \sharp G \sharp A B C \sharp D F f \sharp
 G A B \flat C D E \flat F \sharp g
 A \flat B \flat B C \sharp D \sharp E G a \flat
 *A B C D E F G \sharp a
 B \flat C D \flat E \flat F G \flat A b \flat
 B C \sharp D E F \sharp G A \sharp b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#48 PTOLEMY'S MIXED HYPODORIAN

1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$
 C D E \flat F G A \flat A c
 D \flat E \flat E F \sharp G \sharp A B \flat d \flat
 *D E F G A B \flat B d
 E \flat F G \flat A \flat B \flat B C e \flat
 E F \sharp G A B C D \flat e
 F G A \flat B \flat C D \flat D f
 F \sharp G \sharp A B C \sharp D E \flat f \sharp
 G A B \flat C D E \flat E g
 A \flat B \flat B C \sharp D \sharp E F a \flat
 *A B C D E F G \flat a
 B \flat C D \flat E \flat F G \flat G b \flat
 B C \sharp D E F \sharp G A \flat b

#50 DORIAN

1 - $\frac{1}{2}$ -1 -1 -1 - $\frac{1}{2}$ -1
 C D E \flat F G A B \flat c
 D \flat E \flat E G \flat A \flat B \flat B d \flat
 **D E F G A B C d
 E \flat F G \flat A \flat B \flat C D \flat e \flat
 E F \sharp G A B C \sharp D e
 F G A \flat B \flat C D E \flat f
 F \sharp G \sharp A B C \sharp D \sharp E f \sharp
 *G A B \flat C D E F g
 A \flat B \flat B D \flat E \flat F G \flat a \flat
 *A B C D E F \sharp G a
 B \flat C D \flat E \flat F G A \flat b \flat
 B C \sharp D E F \sharp G \sharp A b

#52 LYDIAN-AUGMENTED

1 -1-1-1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$
 C D E F \sharp G \sharp A B c
 D \flat E \flat F G A B \flat C d \flat
 D E F \sharp G \sharp A \sharp B C \sharp d
 *E \flat F G A B C D e \flat
 E F \sharp G \sharp A \sharp C C \sharp D \sharp e
 *F G A B C \sharp D E f
 G \flat A \flat B \flat C D E \flat F g \flat
 G A B C \sharp D \sharp E F \sharp g
 A \flat B \flat C D E F G a \flat
 A B C \sharp D \sharp F F \sharp G \sharp a
 B \flat C D E F \sharp G A b \flat
 B C \sharp D \sharp F G G \sharp A \sharp b

#49 NATURAL MINOR (Aeolian)

1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ -1 -1
 C D E \flat F G A \flat B \flat c
 D \flat E \flat E F \sharp G \sharp A B d \flat
 *D E F G A B \flat C d
 E \flat F G \flat A \flat B \flat B D \flat e \flat
 *E F \sharp G A B C D e
 F G A \flat B \flat C D \flat E \flat f
 F \sharp G \sharp A B C \sharp D E f \sharp
 G A B \flat C D E \flat F g
 A \flat B \flat B C \sharp D \sharp E G \flat a \flat
 **A B C D E F G a
 B \flat C D \flat E \flat F G \flat A \flat b \flat
 B C \sharp D E F \sharp G A b

#51 LYDIAN

1 -1 -1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 C D E F \sharp G A B c
 D \flat E \flat F G A \flat B \flat C d \flat
 D E F \sharp G \sharp A B C \sharp d
 E \flat F G A B \flat C D e \flat
 E F \sharp G \sharp A \sharp B C \sharp D \sharp e
 **F G A B C D E f
 G \flat A \flat B \flat C D \flat E \flat F g \flat
 G A B C \sharp D E F \sharp g
 A \flat B \flat C D E \flat F G a \flat
 A B C \sharp D \sharp E F \sharp G \sharp a
 *B \flat C D E F G A b \flat
 B D \flat E \flat F G \flat A \flat B \flat b

#53 LEADING WHOLE-TONE

1 -1-1-1-1- $\frac{1}{2}$ - $\frac{1}{2}$
 C D E F \sharp G \sharp A \sharp B c
 D \flat E \flat F G A B C d \flat
 D E F \sharp G \sharp A \sharp C C \sharp d
 E \flat F G A B C \sharp D e \flat
 E F \sharp G \sharp A \sharp C D D \sharp e
 F G A B C \sharp D \sharp E f
 G \flat A \flat B \flat C D E F g \flat
 G A B C \sharp D \sharp F F \sharp g
 A \flat B \flat C D E F \sharp G a \flat
 A B C \sharp D \sharp F G G \sharp a
 B \flat C D E F \sharp G \sharp A b \flat
 B C \sharp D \sharp F G A A \sharp b

*Uses only white keys on piano except for one note

(cont'd)

**Uses only (and all) white keys on piano (see page 785)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#54 LYDIAN-MINOR

1 - 1- 1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1
 C D E F \sharp G A \flat B \flat c
 D \flat E \flat F G A \flat A B d \flat
 D E F \sharp G \sharp A B \flat C d
 E \flat F G A B \flat B D \flat e \flat
 E F \sharp G \sharp A \sharp B C D e
 F G A B C D \flat E \flat f
 F \sharp G \sharp A \sharp C C \sharp D E f \sharp
 G A B C \sharp D E \flat F g
 A \flat B \flat C D E \flat E G \flat a \flat
 A B C \sharp D \sharp E F G a
 B \flat C D E F G \flat A \flat b \flat
 B C \sharp D \sharp F F \sharp G A b

#56 IONIAN-AUGMENTED

1 -1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$
 *C D E F G \sharp A B c
 D \flat E \flat F G \flat A B \flat C d \flat
 D E F \sharp G A \sharp B C \sharp d
 E \flat F G A \flat B C D e \flat
 E F \sharp G \sharp A C C \sharp D \sharp e
 F G A B \flat C \sharp D E f
 G \flat A \flat B \flat B D E \flat F g \flat
 G A B C D \sharp E F \sharp g
 A \flat B \flat C D \flat E F G a \flat
 A B C \sharp D F F \sharp G \sharp a
 B \flat C D E \flat F \sharp G A b \flat
 B C \sharp D \sharp E G G \sharp A \sharp b

#58 ZENKLA

1 -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1
 C D E F G \flat A B \flat c
 D \flat E \flat F G \flat G B \flat B d \flat
 D E F \sharp G A \flat B C d
 E \flat F G A \flat A C D \flat e \flat
 E F \sharp G \sharp A B \flat C \sharp D e
 F G A B \flat B D E \flat f
 F \sharp G \sharp A \sharp B C D \sharp E f \sharp
 *G A B C D \flat E F g
 A \flat B \flat C D \flat D F G \flat a \flat
 A B C \sharp D E \flat F \sharp G a
 B \flat C D E \flat E G A \flat b \flat
 B C \sharp D \sharp E F G \sharp A b

#55 OVERTONE

1 -1 -1 - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1
 C D E F \sharp G A B \flat c
 D \flat E \flat F G A \flat B \flat B d \flat
 D E F \sharp G \sharp A B C d
 E \flat F G A B \flat C D \flat e \flat
 E F \sharp G \sharp A \sharp B C \sharp D e
 *F G A B C D E \flat f
 F \sharp G A \sharp C C \sharp D \sharp E f \sharp
 *G A B C \sharp D E F g
 A \flat B \flat C D E \flat F G \flat a \flat
 A B C \sharp D \sharp E F \sharp G a
 B \flat C D E F G A \flat b \flat
 B C \sharp D \sharp F F \sharp G \sharp A b

#57 LOCRIAN-MAJOR

1 - 1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1- 1
 C D E F G \flat A \flat B \flat c
 D \flat E \flat F G \flat G A B d \flat
 D E F \sharp G A \flat B \flat C d
 E \flat F G A \flat A B D \flat e \flat
 E F \sharp G \sharp A B \flat C D e
 F G A B \flat B D \flat E \flat f
 F \sharp G \sharp A \sharp B C D E f \sharp
 G A B C D \flat E \flat F g
 A \flat B \flat C D \flat D E G \flat a \flat
 A B C \sharp D E \flat F G a
 B \flat C D E \flat E G \flat A \flat b \flat
 B C \sharp D \sharp E F G A b

#59 RUMMEL-MEIA

1 -1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1
 C D E F G \sharp A B \flat c
 D \flat E \flat F G \flat A B \flat B d \flat
 D E F \sharp G A \sharp B C d
 E \flat F G A \flat B C D \flat e \flat
 E F \sharp G \sharp A C C \sharp D e
 F G A B \flat C \sharp D E \flat f
 F \sharp G \sharp A \sharp B D D \sharp E f \sharp
 *G A B C D \sharp E F g
 A \flat B \flat C D \flat E F G \flat a \flat
 A B C \sharp D F F \sharp G a
 B \flat C D E \flat F \sharp G A \flat b \flat
 B C \sharp D \sharp E G G \sharp A b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

7-Tone Scales (cont'd):

#60 HARMONIC-MAJOR

1 -1 - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
 *C D E F G A \flat B c
 D \flat E \flat F G \flat A \flat A C d \flat
 D E F \sharp G A B \flat C \sharp d
 E \flat F G A \flat B \flat B D e \flat
 E F \sharp G \sharp A B C D \sharp e
 F G A B \flat C D \flat E f
 G \flat A \flat B \flat B C \sharp D F g \flat
 G A B C D E \flat F \sharp g
 A \flat B \flat C D \flat E \flat E G a \flat
 A B C \sharp D E F G \sharp a
 B \flat C D E \flat F G \flat A b \flat
 B C \sharp D \sharp E F \sharp G A \sharp b

#62 MIXOLYDIAN

1 -1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ -1
 *C D E F G A B \flat c
 D \flat E \flat F G \flat A \flat B \flat B d \flat
 *D E F \sharp G A B C d
 E \flat F G A \flat B \flat C D \flat e \flat
 E F \sharp G \sharp A B C \sharp D e
 F G A B \flat C D E \flat f
 F \sharp G \sharp A \sharp B C \sharp D \sharp E f \sharp
 **G A B C D E F g
 A \flat B \flat C D \flat E \flat F G \flat a \flat
 A B C \sharp D E F \sharp G a
 B \flat C D E \flat F G A \flat b \flat
 B C \sharp D \sharp E F \sharp G \sharp A b

#66 BLUES

1 $\frac{1}{2}$ -1 - $\frac{1}{2}$ - $\frac{1}{2}$ -1 $\frac{1}{2}$ -1
 C E \flat F G \flat G B \flat c
 D \flat E F \sharp G A \flat B d \flat
 *D F G G \sharp A C d
 E \flat F \sharp G \sharp A B \flat D \flat e \flat
 *E G A B \flat B D e
 F G \sharp A \sharp B C D \sharp f
 G \flat A B C D \flat E g \flat
 G B \flat C D \flat D F g
 A \flat B C \sharp D E \flat F \sharp a \flat
 *A C D E \flat E G a
 B \flat C \sharp D \sharp E F A \flat b \flat
 *B D E F G \flat A b

#61 HINDUSTAN

1 -1 - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1 -1
 C D E F G A \flat B \flat c
 D \flat E \flat F G \flat A \flat A B d \flat
 D E F \sharp G A B \flat C d
 E \flat F G A \flat B \flat B D \flat e \flat
 E F \sharp G \sharp A B C D e
 F G A B \flat C D \flat E \flat f
 F \sharp G \sharp A \sharp B C \sharp D E f \sharp
 G A B C D E \flat F g
 A \flat B \flat C D \flat E \flat E G \flat a \flat
 *A B C \sharp D E F G a
 B \flat C D E \flat F G \flat A \flat b \flat
 B C \sharp D \sharp E F \sharp G A b

6-TONE SCALES:

#65 AFRICAN

1 $\frac{1}{2}$ -1 -1 -1 -1 - $\frac{1}{2}$
 *C E \flat F G A B c
 D \flat E G \flat A \flat B \flat C d \flat
 *D F G A B C \sharp d
 E \flat G \flat A \flat B \flat C D e \flat
 E G A B C \sharp D \sharp e
 F A \flat B \flat C D E f
 G \flat A B D \flat E \flat F g \flat
 G B \flat C D E F \sharp g
 A \flat B D \flat E \flat F G a \flat
 A C D E F \sharp G \sharp a
 B \flat D \flat E \flat F G A b \flat
 B D E F \sharp G \sharp A \sharp b

#67 VILASAKHANI

$\frac{1}{2}$ -1 -1 $\frac{1}{2}$ -1 -1 $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E \flat G \flat A \flat B c
 *D \flat D E G A C d \flat
 D E \flat F A \flat B \flat C \sharp d
 E \flat E G \flat A B D e \flat
 E F G A \sharp C D \sharp e
 F G \flat A \flat B D \flat E f
 *G \flat G A C D F g \flat
 G A \flat B \flat D \flat E \flat F \sharp g
 *A \flat A B D E G a \flat
 A B \flat C E \flat F G \sharp a
 B \flat B D \flat E G \flat A b \flat
 *B C D F G A \sharp b

*Uses only white keys on piano except for one note

(cont'd)

**Uses only (and all) white keys on piano (see page 785)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#68 LOCRIAN 6-TONE

$\frac{1}{2}$ -1 -1 $\frac{1}{2}$ - 1- 1- 1
 C D \flat E \flat G \flat A \flat B \flat c
 *D \flat D E G A B d \flat
 D E \flat F A \flat B \flat C d
 E \flat E G \flat A B D \flat e \flat
 *E F G A \sharp C D e
 F G \flat A \flat B D \flat E \flat f
 *F \sharp G A C D E f \sharp
 G A \flat B \flat D \flat E \flat F g
 A \flat A B D E G \flat a \flat
 A B \flat C E \flat F G a
 B \flat B D \flat E G \flat A \flat b \flat
 **B C D F G A b

#70 GURJARI

$\frac{1}{2}$ -1 -1 -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E \flat F A \flat B c
 D \flat D E G \flat A C d \flat
 D E \flat F G B \flat C \sharp d
 E \flat E G \flat A \flat B D e \flat
 *E F G A C D \sharp e
 F G \flat A \flat B \flat D \flat E f
 *G \flat G A B D F g \flat
 G A \flat B \flat C E \flat F \sharp g
 A \flat A B D \flat E G a \flat
 A B \flat C D F G \sharp a
 B \flat B D \flat E \flat G \flat A b \flat
 *B C D E G A \sharp b

#72 PHRYGIAN 6-TONE

$\frac{1}{2}$ -1 -1 -1 $\frac{1}{2}$ - 1- 1
 C D \flat E \flat F A \flat B \flat c
 D \flat D E G \flat A B d \flat
 D E \flat F G B \flat C d
 E \flat E G \flat A \flat B D \flat e \flat
 **E F G A C D e
 F G \flat A \flat B \flat D \flat E \flat f
 *F \sharp G A B D E f \sharp
 G A \flat B \flat C E \flat F g
 A \flat A B D \flat E G \flat a \flat
 *A B \flat C D F G a
 B \flat B D \flat E \flat G \flat A \flat b \flat
 **B C D E G A b

#69 HIDSHAF

$\frac{1}{2}$ -1 -1 $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \flat E \flat G \flat A B \flat c
 D \flat D E G B \flat B d \flat
 D E \flat F A \flat B C d
 E \flat E G \flat A C D \flat e \flat
 E F G A \sharp C \sharp D e
 F G \flat A \flat B D E \flat f
 F \sharp G A C D \sharp E f \sharp
 G A \flat B \flat D \flat E F g
 A \flat A B D F G \flat a \flat
 A B \flat C D \sharp F \sharp G a
 B \flat B D \flat E G A \flat b \flat
 *B C D F G \sharp A b

#71 ABUSELIK

$\frac{1}{2}$ -2 - $\frac{1}{2}$ -1 -1 - 1
 C D \flat F G \flat A \flat B \flat c
 D \flat D F \sharp G A B d \flat
 D E \flat G A \flat B \flat C d
 E \flat E G \sharp A B D \flat e \flat
 *E F A B \flat C D e
 F G \flat A \sharp B C \sharp D \sharp f
 *F \sharp G B C D E f \sharp
 G A \flat C D \flat E \flat F g
 A \flat A C \sharp D E G \flat a \flat
 A B \flat D E \flat F G a
 B \flat B D \sharp E G \flat A \flat b \flat
 **B C E F G A b

#73 IN SCALE

$\frac{1}{2}$ -2 -1 - $\frac{1}{2}$ -1 -1
 C D \flat F G A \flat B \flat c
 D \flat D G \flat A \flat A B d \flat
 D E \flat G A B \flat C d
 E \flat E G \sharp A \sharp B D \flat e \flat
 **E F A B C D e
 F G \flat B \flat C D \flat E \flat f
 F \sharp G B C \sharp D E f \sharp
 G A \flat C D E \flat F g
 A \flat A C \sharp D \sharp E G \flat a \flat
 *A B \flat D E F G a
 B \flat B E \flat F G \flat A \flat b \flat
 *B C E F \sharp G A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#74 SAMANTA

$\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - 2
 C D \flat E \flat F G A \flat c
 D \flat D E F \sharp G \sharp A d \flat
 D E \flat F G A B \flat d
 E \flat E F \sharp G \sharp A \sharp B e \flat
 **E F G A B C e
 F G \flat A \flat B \flat C D \flat f
 F \sharp G A B C \sharp D f \sharp
 G A \flat B \flat C D E \flat g
 A \flat A B C \sharp D \sharp E a \flat
 *A B \flat C D E F a
 B \flat B D \flat E \flat F G \flat b \flat
 *B C D E F \sharp G b

#76 AFRICA

$\frac{1}{2}$ -1 -1 -1 -1 -1 $\frac{1}{2}$
 C D \flat E \flat F G A c
 D \flat D E G \flat A \flat B \flat d \flat
 *D E \flat F G A B d
 E \flat E G \flat A \flat B \flat C e \flat
 E F G A B C \sharp e
 F G \flat A \flat B \flat C D f
 F \sharp G A B C \sharp D \sharp f \sharp
 G A \flat B \flat C D E g
 A \flat A B D \flat E \flat F a \flat
 A B \flat C D E F \sharp a
 B \flat B D \flat E \flat F G b \flat
 B C D E F \sharp G \sharp b

#78 PANCHANA

$\frac{1}{2}$ -1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - 1- $\frac{1}{2}$
 C D \flat E G \flat A B c
 D \flat D F G B \flat C d \flat
 D E \flat G \flat A \flat B C \sharp d
 *E \flat E G A C D e \flat
 E F G \sharp A \sharp C \sharp D \sharp e
 *F G \flat A B D E f
 G \flat G B \flat C E \flat F g \flat
 G A \flat B C \sharp E F \sharp g
 *A \flat A C D F G a \flat
 A B \flat D \flat E \flat F \sharp G \sharp a
 *B \flat B D E G A b \flat
 B C D \sharp F G \sharp A \sharp b

#75 IRISH

1 $\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - 1- 1
 C E \flat F G A \flat B \flat c
 D \flat E F \sharp G \sharp A B d \flat
 *D F G A B \flat C d
 E \flat F \sharp G \sharp A \sharp B C \sharp e \flat
 **E G A B C D e
 F A \flat B \flat C D \flat E \flat f
 F \sharp A B C \sharp D E f \sharp
 G B \flat C D E \flat F g
 A \flat B C \sharp D \sharp E F \sharp a \flat
 **A C D E F G a
 B \flat D \flat E \flat F G \flat A b \flat
 *B D E F \sharp G A b

#77 DORIAN 6-TONE

1 $\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - 1
 C E \flat F G A B \flat c
 D \flat E F \sharp G \sharp A \sharp B d \flat
 **D F G A B C d
 E \flat G \flat A \flat B \flat C D \flat e \flat
 *E G A B C \sharp D e
 F A \flat B \flat C D E \flat f
 F \sharp A B C \sharp D \sharp E f \sharp
 *G B \flat C D E F g
 A \flat B D \flat E \flat F G \flat a \flat
 *A C D E F \sharp G a
 B \flat D \flat E \flat F G A b \flat
 B D E F \sharp G \sharp A b

#79 PROMETHEUS-NEAPOLITAN

$\frac{1}{2}$ -1 $\frac{1}{2}$ - 1-1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \flat E F \sharp A B \flat c
 D \flat D F G A \sharp B d \flat
 D E \flat G \flat A \flat B C d
 E \flat E G A C D \flat e \flat
 E F G \sharp A \sharp C \sharp D e
 F G \flat A B D E \flat f
 F \sharp G A \sharp C D \sharp E f \sharp
 G A \flat B D \flat E F g
 A \flat A C D F G \flat a \flat
 A B \flat D \flat E \flat F \sharp G a
 B \flat B D E G A b \flat
 B C D \sharp F G \sharp A b

*Uses only white keys on piano except for one note

(cont'd)

**Uses only white keys on piano (see page 785)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#80 AUGMENTED

$1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}$
 C D# E G Ab B c
 Db E F Ab A C db
 D F F# A Bb C# d
 Eb F# G A# B D eb
 E G Ab B C D# e
 F G# A C Db E f
 Gb A Bb C# D F gb
 G A# B D Eb F# g
 Ab B C D# E G ab
 A C Db E F G# a
 Bb C# D F Gb A bb
 B D Eb F# G A# b

#82 6-TONE SYMMETRICAL

$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1\frac{1}{2}$
 C Db E F G# A c
 Db D F Gb A Bb db
 D Eb F# G A# B d
 Eb E G Ab B C eb
 E F G# A C Db e
 F Gb A Bb C# D f
 F# G A# B D Eb f#
 G Ab B C D# E g
 Ab A C Db E F ab
 A Bb C# D F Gb a
 Bb B D Eb F# G bb
 B C D# E G Ab b

#84 GREEK

$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-1\frac{1}{2}-1$
 C Db E F G Bb c
 Db D F Gb Ab B db
 D Eb F# G A C d
 Eb E G Ab Bb Db eb
 *E F G# A B D e
 F Gb A Bb C Eb f
 F# G A# B C# E f#
 *G Ab B C D F g
 Ab A C Db Eb Gb ab
 A Bb C# D E G a
 Bb B D Eb F Ab bb
 B C D# E F# A b

#81 COMBINED-ALTERED

$\frac{1}{2}-1\frac{1}{2}-1-\frac{1}{2}-\frac{1}{2}-2$
 C Db E F# G Ab c
 Db D F G Ab A db
 D Eb F# G# A Bb d
 Eb E G A Bb B eb
 E F G# A# B C e
 F Gb A B C Db f
 F# G A# C C# D f#
 G Ab B C# D Eb g
 Ab A C D Eb E ab
 A Bb Db Eb E F a
 Bb B D E F Gb bb
 B C Eb F F# G b

#83 BANGALA

$\frac{1}{2}-1\frac{1}{2}-\frac{1}{2}-1-\frac{1}{2}-2$
 C Db E F G Ab c
 Db D F Gb Ab A db
 D Eb F# G A Bb d
 Eb E G Ab Bb B eb
 *E F G# A B C e
 F Gb A Bb C Db f
 F# G A# B C# D f#
 G Ab B C D Eb g
 Ab A C Db Eb E ab
 A Bb C# D E F a
 Bb B D Eb F Gb bb
 B C D# E F# G b

#85 POLISH

$2-\frac{1}{2}-1-1-\frac{1}{2}-1$
 *C E F G A Bb c
 Db F Gb Ab Bb B db
 *D F# G A B C d
 Eb G Ab Bb C Db eb
 E G# A B C# D e
 F A Bb C D Eb f
 F# A# B C# D# E f#
 **G B C D E F g
 Ab C Db Eb F Gb ab
 A C# D E F# G a
 Bb D Eb F G Ab bb
 B D# E F# G# A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#86 IONIAN 6-TONE

1 -1½- 1- 1- 1- ½
 **C D F G A B c
 D♭ E♭ G♭ A♭ B♭ C d♭
 *D E G A B C♯ d
 E♭ F A♭ B♭ C D e♭
 E F♯ A B C♯ D♯ e
 *F G B♭ C D E f
 G♭ A♭ B D♭ E♭ F g♭
 *G A C D E F♯ g
 A♭ B♭ D♭ E♭ F G a♭
 A B D E F♯ G♯ a
 B♭ C E♭ F G A b♭
 B C♯ E F♯ G♯ A♯ b

#89 OVERTONE 6-TONE

1 -2 -½ -1 -½ - 1
 C D F♯ G A B♭ c
 D♭ E♭ G A♭ B♭ B d♭
 *D E G♯ A B C d
 E♭ F A B♭ C D♭ e♭
 E F♯ A♯ B C♯ D e
 *F G B C D E♭ f
 G♭ A♭ C D♭ E♭ E g♭
 *G A C♯ D E F g
 A♭ B♭ D E♭ F G♭ a♭
 A B D♯ E F♯ G a
 B♭ C E F G A♭ b♭
 B C♯ F F♯ G♯ A b

#91 ARMENIAN

1 -1½- 1- ½-1½- ½
 *C D F G A♭ B c
 D♭ E♭ F♯ G♯ A C d♭
 D E G A B♭ C♯ d
 E♭ F A♭ B♭ B D e♭
 E F♯ A B C D♯ e
 F G B♭ C D♭ E f
 F♯ G♯ B C♯ D F f♯
 G A C D E♭ F♯ g
 A♭ B♭ D♭ E♭ E G a♭
 *A B D E F G♯ a
 B♭ C E♭ F G♭ A b♭
 B C♯ E F♯ G A♯ b

#88 AKEBONO

1 -½ -2 -1 -½ - 1
 C D E♭ G A B♭ c
 D♭ E♭ E A♭ B♭ B d♭
 **D E F A B C d
 E♭ F G♭ B♭ C D♭ e♭
 E F♯ G B C♯ D e
 F G A♭ C D E♭ f
 F♯ G♯ A C♯ D♯ E f♯
 *G A B♭ D E F g
 A♭ B♭ B E♭ F G♭ a♭
 *A B C E F♯ G a
 B♭ C D♭ F G A♭ b♭
 B C♯ D F♯ G♯ A b

#90 AEOLIAN 6-TONE

1 -½ -1 -1½- 1- 1
 C D E♭ F A♭ B♭ c
 D♭ E♭ E G♭ A B d♭
 *D E F G B♭ C d
 E♭ F G♭ A♭ B D♭ e♭
 *E F♯ G A C D e
 F G A♭ B♭ D♭ E♭ f
 F♯ G♯ A B D E f♯
 G A B♭ C E♭ F g
 A♭ B♭ B D♭ E G♭ a♭
 **A B C D F G a
 B♭ C D♭ E♭ G♭ A♭ b♭
 *B C♯ D E G A b

#92 GREEK

1 -½ -1 -1 -1½- 1
 C D E♭ F G B♭ c
 D♭ E♭ E G♭ A♭ B d♭
 **D E F G A C d
 E♭ F G♭ A♭ B♭ D♭ e♭
 *E F♯ G A B D e
 F G A♭ B♭ C E♭ f
 F♯ G♯ A B C♯ E f♯
 *G A B♭ C D F g
 A♭ B♭ B D♭ E♭ G♭ a♭
 **A B C D E G a
 B♭ C D♭ E♭ F A♭ b♭
 B C♯ D E F♯ A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#93 GLINKA'S

1 - $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ - 2
 C D E \flat F G A \flat c
 D \flat E \flat E F \sharp G \sharp A d \flat
 *D E F G A B \flat d
 E \flat F G \flat A \flat B \flat B e \flat
 *E F \sharp G A B C D e
 F G A \flat B \flat C D \flat f
 F \sharp G \sharp A B C \sharp D f \sharp
 G A B \flat C D E \flat g
 A \flat B \flat B C \sharp D \sharp E a \flat
 **A B C D E F a
 B \flat C D \flat E \flat F G \flat b \flat
 B C \sharp D E F \sharp G b

#95 APPALACHIAN

1 -1 $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$ - 1
 *C D F G A B \flat c
 D \flat E \flat F \sharp G \sharp A \sharp B d \flat
 **D E G A B C d
 E \flat F A \flat B \flat C D \flat e \flat
 E F \sharp A B C \sharp D e
 F G B \flat C D E \flat f
 F \sharp G \sharp B C \sharp D \sharp E f \sharp
 **G A C D E F g
 A \flat B \flat D \flat E \flat F G \flat a \flat
 *A B D E F \sharp G a
 B \flat C E \flat F G A \flat b \flat
 B C \sharp E F \sharp G \sharp A b

#97 WHOLE TONE

1 -1 -1 -1 -1 - 1
 C D E F \sharp G \sharp A \sharp c
 D \flat E \flat F G A B d \flat
 D E F \sharp G \sharp A \sharp C d
 E \flat F G A B D \flat e \flat
 E F \sharp G \sharp A \sharp C D e
 F G A B D \flat E \flat f
 G \flat A \flat B \flat C D E g \flat
 G A B C \sharp D \sharp F g
 A \flat B \flat C D E F \sharp a \flat
 A B C \sharp D \sharp F G a
 B \flat C D E G \flat A \flat b \flat
 B C \sharp D \sharp F G A b

#94 HUNGARIAN

1 - $\frac{1}{2}$ -1 -1 -1 -1 $\frac{1}{2}$
 *C D E \flat F G A c
 D \flat E \flat E G \flat A \flat B \flat d \flat
 **D E F G A B d
 E \flat F G \flat A \flat B \flat C e \flat
 E F \sharp G A B C \sharp e
 F G A \flat B \flat C D \flat f
 F \sharp G \sharp A B C \sharp D \sharp f \sharp
 *G A B \flat C D E g
 A \flat B \flat B D \flat E \flat F a \flat
 *A B C D E F \sharp a
 B \flat C D \flat E \flat F G b \flat
 B C \sharp D E F \sharp G \sharp b

#96 SCOTCH

1 -1 -1 $\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 **C D E G A B c
 D \flat E \flat F A \flat B \flat C d \flat
 D E F \sharp A B C \sharp d
 E \flat F G B \flat C D e \flat
 E F \sharp G \sharp B C \sharp D \sharp e
 **F G A C D E f
 G \flat A \flat B \flat D \flat E \flat F g \flat
 *G A B D E F \sharp g
 A \flat B \flat C E \flat F G a \flat
 A B C \sharp E F \sharp G \sharp a
 *B \flat C D F G A b \flat
 B C \sharp D \sharp F \sharp G \sharp A \sharp b

#98 PROMETHEUS

1 -1 -1 -1 $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D E F \sharp A B \flat c
 D \flat E \flat F G A \sharp B d \flat
 D E F \sharp G \sharp B C d
 E \flat F G A C D \flat e \flat
 E F \sharp G \sharp A \sharp C \sharp D e
 *F G A B D E \flat f
 F \sharp G \sharp A \sharp C D \sharp E f \sharp
 *G A B D \flat E F g
 A \flat B \flat C D F G \flat a \flat
 A B C \sharp D \sharp F \sharp G a
 B \flat C D E G A \flat b \flat
 B C \sharp D \sharp F G \sharp A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

6-Tone Scales (cont'd):

#99 LYDIAN 6-TONE

1- 1- 1- $\frac{1}{2}$ - 1- $1\frac{1}{2}$
 *C D E F# G A c
 Db Eb F G Ab Bb db
 D E F# G# A B d
 Eb F G A Bb C eb
 E F# G# A# B C# e
 **F G A B C D f
 Gb Ab Bb C Db Eb gb
 *G A B C# D E g
 Ab Bb C D Eb F ab
 A B C# D# E F# a
 *Bb C D E F G bb
 B Db Eb F Gb Ab b

#102 MIXOLYDIAN 6-TONE

1 -1 - $\frac{1}{2}$ -1 - $1\frac{1}{2}$ 1
 *C D E F G Bb c
 Db Eb F Gb Ab B db
 *D E F# G A C d
 Eb F G Ab Bb Db eb
 E F# G# A B D e
 F G A Bb C Eb f
 F# G# A# B C# E f#
 **G A B C D F g
 Ab Bb C Db Eb Gb ab
 *A B C# D E G a
 Bb C D Eb F Ab bb
 B C# D# E F# A b

#100 SCOTCH

1 -1 - $1\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1
 *C D E G A Bb c
 Db Eb F Ab Bb B db
 *D E F# A B C d
 Eb F G Bb C Db eb
 E F# G# B C# D e
 *F G A C D Eb f
 F# G# A# C# D# E f#
 **G A B D E F g
 Ab Bb C Eb F Gb ab
 A B C# E F# G a
 Bb C D F G Ab bb
 B C# D# F# G# A b

#103 GUIDO'S

1 -1 - $\frac{1}{2}$ -1 -1 - $1\frac{1}{2}$
 **C D E F G A c
 Db Eb F Gb Ab Bb db
 *D E F# G A B d
 Eb F G Ab Bb C eb
 E F# G# A B C# e
 *F G A Bb C D f
 F# G# A# B C# D# f#
 **G A B C D E g
 Ab Bb C Db Eb F ab
 A B C# D E F# a
 Bb C D Eb F G bb
 B C# D# E F# G# b

8-TONE SCALES:

#104 HINDU

$\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1 -1 -1 - $\frac{1}{2}$
 *C Db D E F G A B c
 Db D Eb F Gb Ab Bb C db
 D D# E F# G A B C# d
 Eb E F G Ab Bb C D eb
 E F Gb Ab A B C# D# e
 F Gb G A Bb C D E f
 Gb G Ab Bb B Db Eb F gb
 G Ab A B C D E F# g
 Ab A Bb C Db Eb F G ab
 A Bb B C# D E F# G# a
 Bb B C D Eb F G A bb
 B C Db Eb E F# G# A# b

#105 LOCRIAN 8-TONE #1

$\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ -1 - $\frac{1}{2}$ -1 -1 - 1
 C Db D Eb F Gb Ab Bb c
 Db D Eb E F# G A B db
 D Eb E F G Ab Bb C d
 Eb E F Gb Ab A B Db eb
 E F Gb G A Bb C D e
 F Gb G Ab Bb B Db Eb f
 F# G Ab A B C D E f#
 G Ab A Bb C Db Eb F g
 Ab A Bb B C# D E Gb ab
 A Bb B C D Eb F G a
 Bb B C Db Eb E Gb Ab bb
 *B C C# D E F G A b

*Uses only white keys on piano except for one note

**Uses only white keys on piano (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

8-Tone Scales (cont'd):

#106 PHRYGIAN 8-TONE #1

$\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ -1 - 1
 C D \flat D E \flat F G A \flat B \flat c
 D \flat D E \flat E F \sharp G \sharp A B d \flat
 D E \flat E F G A B \flat C d
 E \flat E F G \flat A \flat B \flat B D \flat e \flat
 *E F F \sharp G A B C D e
 F G \flat G A \flat B \flat C D \flat E \flat f
 F \sharp G A \flat A B C \sharp D E f \sharp
 G A \flat A B \flat C D E \flat F g
 A \flat A B \flat B C \sharp D \sharp E G \flat a \flat
 *A B \flat B C D E F G a
 B \flat B C D \flat E \flat F G \flat A \flat b \flat
 B C C \sharp D E F \sharp G A b

#108 PORTUGUESE (octave + $\frac{1}{2}$)

1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 -1 - 1
 C D E \flat E F \sharp G A B c \sharp
 D \flat E \flat E F G A \flat B \flat C d
 D E F G \flat A \flat A B C \sharp d \sharp
 E \flat F G \flat G A B \flat C D e
 E F \sharp G G \sharp A \sharp B C \sharp D \sharp f
 F G A \flat A B C D E f \sharp
 F \sharp G \sharp A B \flat C D \flat E \flat F g
 G A B \flat B C \sharp D E F \sharp g \sharp
 A \flat B \flat B C D E \flat F G a
 A B C D \flat E \flat E F \sharp G \sharp a \sharp
 B \flat C D \flat D E F G A b
 B C \sharp D E \flat F G \flat A \flat B \flat c

#110 ESPLA'S SCALE

$\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1- 1
 C D \flat E \flat E F G \flat A \flat B \flat c
 D \flat D E F G \flat G A B d \flat
 D E \flat F G \flat G A \flat B \flat C d
 E \flat E F \sharp G A \flat A B D \flat e \flat
 E F G A \flat A B \flat C D e
 F G \flat A \flat A B \flat B D \flat E \flat f
 F \sharp G A A \sharp B C D E f \sharp
 G A \flat B \flat B C D \flat E \flat F g
 A \flat A B C D \flat D E G \flat a \flat
 A B \flat C D \flat D E \flat F G a
 B \flat B C \sharp D E \flat E G \flat A \flat b \flat
 *B C D E \flat E F G A b

#107 HINDU

$\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 C D \flat D E F \sharp G A B c
 D \flat D E \flat F G A \flat B \flat C d \flat
 D E \flat E F \sharp G \sharp A B C \sharp d
 E \flat E F G A B \flat C D e \flat
 E F G \flat A \flat B \flat B C \sharp D \sharp e
 *F G \flat G A B C D E f
 G \flat G A \flat B \flat C D \flat E \flat F g \flat
 G A \flat A B C \sharp D E F \sharp g
 A \flat A B \flat C D E \flat F G a \flat
 A B \flat B C \sharp D \sharp E F \sharp G \sharp a
 *B \flat B C D E F G A b \flat
 B C D \flat E \flat F G \flat A \flat B \flat b

#109 DIMINISHED #2

$\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1
 C D \flat E \flat E F \sharp G A B \flat c
 D \flat D E F G A \flat B \flat B d \flat
 D E \flat F G \flat A \flat A B C d
 E \flat E F \sharp G A B \flat C D \flat e \flat
 E F G A \flat B \flat B C \sharp D e
 F G \flat A \flat A B C D E \flat f
 F \sharp G A B \flat C D \flat E \flat E f \sharp
 G A \flat B \flat B C \sharp D E F g
 A \flat A B C D E \flat F G \flat a \flat
 A B \flat C D \flat E \flat E F \sharp G a
 B \flat B C \sharp D E F G A \flat b \flat
 B C D E \flat F G \flat A \flat A b

#111 SPANISH 8-TONE

$\frac{1}{2}$ - 1- $\frac{1}{2}$ - $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- 1
 C D \flat E \flat E F G A \flat B \flat c
 D \flat D E F G \flat A \flat A B d \flat
 D E \flat F G \flat G A B \flat C d
 E \flat E F \sharp G A \flat B \flat B D \flat e \flat
 *E F G A \flat A B C D e
 F F \sharp G \sharp A B \flat C D \flat E \flat f
 F \sharp G A B \flat B C \sharp D E f \sharp
 G A \flat B \flat B C D E \flat F g
 A \flat A B C D \flat E \flat E F \sharp a \flat
 A B \flat C C \sharp D E F G a
 B \flat B C \sharp D E \flat F G \flat A \flat b \flat
 B C D D \sharp E F \sharp G A b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

8-Tone Scales (cont'd):

#112 LATIN AMERICAN

$\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ - 1
 C D \flat E \flat E F G A B \flat c
 D \flat D E F G \flat A \flat B \flat B d \flat
 D E \flat F F \sharp G A B C d
 E \flat E F \sharp G A \flat B \flat C D \flat e \flat
 E F G G \sharp A B C \sharp D e
 F G \flat A \flat A B \flat C D E \flat f
 F \sharp G A A \sharp B C \sharp D \sharp E f \sharp
 G A \flat B \flat B C D E F g
 A \flat A B C D \flat E \flat F G \flat a \flat
 A B \flat C C \sharp D E F \sharp G a
 B \flat B C \sharp D E \flat F G A \flat b \flat
 B C D D \sharp E F \sharp G \sharp A b

#114 LOCRIAN 8-TONE #2

$\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1- 1
 C D \flat E \flat F G \flat G A \flat B \flat c
 D \flat D E F \sharp G A \flat A B d \flat
 D E \flat F G A \flat A B \flat C d
 E \flat E F \sharp G \sharp A B \flat B C \sharp e \flat
 *E F G A B \flat B C D e
 F G \flat A \flat B \flat B C D \flat E \flat f
 F \sharp G A B C C \sharp D E f \sharp
 G A \flat B \flat C D \flat D E \flat F g
 A \flat A B D \flat D E \flat E G \flat a \flat
 A B \flat C D E \flat E F G a
 B \flat B C \sharp D \sharp E F G \flat A \flat b \flat
 *B C D E F F \sharp G A b

#116 'IRAQ

$\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - $\frac{1}{2}$
 C D \flat E \flat F G \flat A \flat B \flat B c
 D \flat D E F \sharp G A B C d \flat
 D E \flat F G A \flat B \flat C C \sharp d
 E \flat E F \sharp G \sharp A B C \sharp D e \flat
 E F G A B \flat C D E \flat e
 F F \sharp G \sharp A \sharp B C \sharp D \sharp E f
 *G \flat G A B C D E F g \flat
 G A \flat B \flat C D \flat E \flat F G \flat g
 A \flat A B C \sharp D E F \sharp G a \flat
 A B \flat C D E \flat F G A \flat a
 B \flat B C \sharp D \sharp E F \sharp G \sharp A b \flat
 *B C D E F G A B \flat b

#113 COMPOSITE #1

$\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - 1
 C D \flat E \flat E F \sharp G A \flat B \flat c
 D \flat D E F G A \flat A B d \flat
 D E \flat F G \flat A \flat A B \flat C d
 E \flat E F \sharp G A B \flat B D \flat e \flat
 E F G A \flat B \flat B C D e
 F G \flat A \flat A B C D \flat E \flat f
 F \sharp G A B \flat C C \sharp D E f \sharp
 G A \flat B \flat B C \sharp D E \flat F g
 A \flat A B C D E \flat E G \flat a \flat
 A B \flat C D \flat E \flat E F G a
 B \flat B C \sharp D E F G \flat A \flat b \flat
 B C D E \flat F G \flat G A b

#115 ZIRAFKAND

$\frac{1}{2}$ - 1- 1- $\frac{1}{2}$ - 1- $\frac{1}{2}$ - 1- $\frac{1}{2}$
 C D \flat E \flat F G \flat A \flat A B c
 D \flat D E F \sharp G A B \flat C d \flat
 D E \flat F G G \sharp A \sharp B C \sharp d
 E \flat E F \sharp G \sharp A B C D e \flat
 E F G A B \flat C D \flat E \flat e
 F G \flat A \flat B \flat B C \sharp D E f
 G \flat G A B C D E \flat F g \flat
 G A \flat B \flat C C \sharp D \sharp E F \sharp g
 A \flat A B C \sharp D E F G a \flat
 A B \flat C D E \flat F F \sharp G \sharp a
 B \flat B C \sharp D \sharp E F \sharp G A b \flat
 B C D E F G A \flat B \flat b

#117 PHRYGIAN 8-TONE #2

$\frac{1}{2}$ - 1- 1- 1- $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - 1
 C D \flat E \flat F G A \flat A B \flat c
 D \flat D E F \sharp G \sharp A B \flat B d \flat
 D E \flat F G A B \flat B C d
 E \flat E F \sharp G \sharp A \sharp B C D \flat e \flat
 *E F G A B C C \sharp D e
 F G \flat A \flat B \flat C D \flat D E \flat f
 F \sharp G A B C \sharp D D \sharp E f \sharp
 G A \flat B \flat C D E \flat E F g
 A \flat A B C \sharp D \sharp E F G \flat a \flat
 A B \flat C D E F G \flat G a
 B \flat B D \flat E \flat F G \flat G A \flat b \flat
 B C D E F \sharp G G \sharp A b

*Uses only white keys on piano except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

8-Tone Scales (cont'd):

#118 BUZURG

$\frac{1}{2}$ $-1\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $1-$ $1-$ $\frac{1}{2}$
 C D \flat E F F \sharp G A B c
 D \flat D F G \flat G A \flat B \flat C d \flat
 D E \flat F \sharp G G \sharp A B C \sharp d
 E \flat E G A \flat A B \flat C D e \flat
 E F G \sharp A A \sharp B C \sharp D \sharp e
 F G \flat A B \flat B C D E f
 F \sharp G A \sharp B C D \flat E \flat F f \sharp
 G A \flat B C C \sharp D E F \sharp g
 A \flat A C D \flat D E \flat F G a \flat
 A B \flat C \sharp D D \sharp E F \sharp G \sharp a
 B \flat B D E \flat E F G A b \flat
 B C D \sharp E F F \sharp G \sharp A \sharp b

#121 JOBIM'S

1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1
 C D E \flat E F \sharp G A B \flat c
 D \flat E \flat E F G A \flat B \flat B d \flat
 D E F F \sharp G \sharp A B C d
 E \flat F G \flat G A B \flat C D \flat e \flat
 E F \sharp G G \sharp A \sharp B C \sharp D e
 F G A \flat A B C D E \flat f
 F \sharp G \sharp A B \flat C D \flat E \flat E f \sharp
 G A A \sharp B C \sharp D E F g
 A \flat B \flat B C D E \flat F G \flat a \flat
 A B C C \sharp D \sharp E F \sharp G a
 B \flat C D \flat D E F G A \flat b \flat
 B C \sharp D E \flat F F \sharp G \sharp A b

#123 DORIAN 8-TONE #1

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ -1
 C D E \flat E F G A B \flat c
 D \flat E \flat E F G \flat A \flat B \flat B d \flat
 *D E F F \sharp G A B C d
 E \flat F G \flat G A \flat B \flat C D \flat e \flat
 E F \sharp G G \sharp A B C \sharp D e
 F G A \flat A B \flat C D E \flat f
 F \sharp G \sharp A A \sharp B C \sharp D \sharp E f \sharp
 *G A B \flat B C D E F g
 A \flat B \flat B C D \flat E \flat F G \flat a \flat
 A B C C \sharp D E F \sharp G a
 B \flat C D \flat D E \flat F G A \flat b \flat
 B C \sharp D D \sharp E F \sharp G \sharp A b

#120 IRAK

$\frac{1}{2}$ $-1\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $1-$ $\frac{1}{2}$ $1-$ $\frac{1}{2}$
 C D \flat E F G \flat A \flat A B c
 D \flat D F G \flat G A B \flat C d \flat
 D E \flat F \sharp G A \flat B \flat B C \sharp d
 E \flat E G A \flat A B C D e \flat
 E F G \sharp A B \flat C D \flat E \flat e
 F G \flat A B \flat B C \sharp D E f
 F \sharp G A \sharp B C D E \flat F f \sharp
 G A \flat B C C \sharp D \sharp E F \sharp g
 A \flat A C D \flat D E F G a \flat
 A B \flat C \sharp D E \flat F G \flat A \flat a
 B \flat B D E \flat E F \sharp G A b \flat
 B C D \sharp E F G A \flat B \flat b

#122 AEOLIAN 8-TONE #1

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 -1
 C D E \flat E F G A \flat B \flat c
 D \flat E \flat E F G \flat A \flat A B d \flat
 D E F F \sharp G A B \flat C d
 E \flat F G \flat G A \flat B \flat B D \flat e \flat
 E F \sharp G G \sharp A B C D e
 F G A \flat A B \flat C D \flat E \flat f
 F \sharp G \sharp A B \flat B C \sharp D E f \sharp
 G A B \flat B C D E \flat F g
 A \flat B \flat B C D \flat E \flat E G \flat a \flat
 *A B C C \sharp D E F G a
 B \flat C D \flat D E \flat F G \flat A \flat b \flat
 B C \sharp D D \sharp E F \sharp G A b

#125 DIMINISHED #1

1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$
 C D E \flat F G \flat A \flat A B c
 D \flat E \flat E F \sharp G A B \flat C d \flat
 D E F G A \flat B \flat B C \sharp d
 E \flat F G \flat A \flat A B C D e \flat
 E F \sharp G A B \flat C D \flat E \flat e
 F G A \flat B \flat B C \sharp D E f
 G \flat A \flat A B C D E \flat F g \flat
 G A B \flat C D \flat E \flat E F \sharp g
 A \flat B \flat B C \sharp D E F G a \flat
 A B C D E \flat F G \flat A \flat a
 B \flat C D \flat E \flat E F \sharp G A b \flat
 B C \sharp D E F G A \flat B \flat b

*Uses only white piano keys except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

8-Tone Scales (cont'd):

#126 COMPOSITE #2

1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ - 1
 C D E \flat F G \flat A \flat A B \flat c
 D \flat E \flat E F \sharp G A B \flat B d \flat
 D E F G A \flat B \flat B C d
 E \flat F G \flat A \flat A B C D \flat e \flat
 E F \sharp G A B \flat C D \flat D e
 F G A \flat B \flat B C \sharp D E \flat f
 F \sharp G \sharp A B C D D \sharp E f \sharp
 G A B \flat C D \flat E \flat E F g
 A \flat B \flat B C \sharp D E F G \flat a \flat
 A B C D E \flat F G \flat G a
 B \flat C D \flat E \flat E F \sharp G A \flat b \flat
 B C \sharp D E F G G \sharp A b

#128 AEOLIAN 8-TONE #2

1 $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ - 1
 C D E \flat F G A \flat A B \flat c
 D \flat E \flat E F \sharp G \sharp A B \flat B d \flat
 *D E F G A B \flat B C d
 E \flat F G \flat A \flat B \flat B C D \flat e \flat
 E F \sharp G A B C C \sharp D e
 F G A \flat B \flat C D \flat D E \flat f
 F \sharp G \sharp A B C \sharp D D \sharp E f \sharp
 G A B \flat C D E \flat E F g
 A \flat B \flat B C \sharp D \sharp E F G \flat a \flat
 *A B C D E F F \sharp G a
 B \flat C D \flat E \flat F G \flat G A \flat b \flat
 B C \sharp D E F \sharp G G \sharp A b

#130 DORIAN 8-TONE #2

1 $-\frac{1}{2}$ -1 -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$
 C D E \flat F G A B \flat B c
 D \flat E \flat E F \sharp G \sharp A \sharp B C d \flat
 *D E F G A B C C \sharp d
 E \flat F G \flat A \flat B \flat C D \flat D e \flat
 E F \sharp G A B C \sharp D D \sharp e
 F G A \flat B \flat C D E \flat E f
 F \sharp G \sharp A B C \sharp D \sharp E F f \sharp
 G A B \flat C D E F G \flat g
 A \flat B \flat B D \flat E \flat F G \flat G a \flat
 A B C D E F \sharp G A \flat a
 B \flat C D \flat E \flat F G A \flat A b \flat
 B C \sharp D E F \sharp G \sharp A A \sharp b

#127 ARABIC

1 $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - $\frac{1}{2}$
 C D E \flat F G A \flat A B c
 D \flat E \flat E F \sharp G \sharp A B \flat C d \flat
 D E F G A B \flat B C \sharp d
 E \flat F G \flat A \flat B \flat B C D e \flat
 E F \sharp G A B C C \sharp D \sharp e
 F G A \flat B \flat C D \flat D E f
 G \flat A \flat A B C \sharp D E \flat F g \flat
 G A B \flat C D E \flat E F \sharp g
 A \flat B \flat B C \sharp D \sharp E F G a \flat
 A B C D E F F \sharp G \sharp a
 B \flat C D \flat E \flat F G \flat G A b \flat
 B C \sharp D E F \sharp G G \sharp A \sharp b

#129 ISFAHAN

1 $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ - $\frac{1}{2}$
 C D E \flat F G A \flat B \flat B c
 D \flat E \flat E F \sharp G \sharp A B C d \flat
 D E F G A B \flat C D \flat d
 E \flat F G \flat A \flat B \flat B C \sharp D e \flat
 E F \sharp G A B C D E \flat e
 F G A \flat B \flat C D \flat E \flat E f
 G \flat A \flat A B C \sharp D E F g \flat
 G A B \flat C D E \flat F G \flat g
 A \flat B \flat B C \sharp D \sharp E F \sharp G a \flat
 *A B C D E F G A \flat a
 B \flat C D \flat E \flat F G \flat A \flat A b \flat
 B C \sharp D E F \sharp G A A \sharp b

#131 RYO 8-TONE

1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 *C D E F F \sharp G A B c
 D \flat E \flat F G \flat G A \flat B \flat C d \flat
 D E F \sharp G G \sharp A B C \sharp d
 E \flat F G A \flat A B \flat C D e \flat
 E F \sharp G \sharp A A \sharp B C \sharp D \sharp e
 *F G A B \flat B C D E f
 G \flat A \flat B \flat B C D \flat E \flat F g \flat
 G A B C C \sharp D E F \sharp g
 A \flat B \flat C D \flat D E \flat F G a \flat
 A B C \sharp D D \sharp E F \sharp G \sharp a
 B \flat C D E \flat E F G A b \flat
 B C \sharp D \sharp E F F \sharp G \sharp A \sharp b

*Uses only white piano keys except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

8-Tone Scales (cont'd):

#132 HINDU

1 -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - $\frac{1}{2}$
 C D E F# G Ab A B c
 Db Eb F G Ab A Bb C db
 D E F# G# A A# B C# d
 Eb F G A Bb B C D eb
 E F# G# A# B C C# D# e
 *F G A B C Db D E f
 Gb Ab Bb C Db D Eb F gb
 G A B C# D D# E F# g
 Ab Bb C D Eb E F G ab
 A B C# D# E F F# G# a
 Bb C D E F Gb G A bb
 B C# D# F F# G G# A# b

#134 BOP SCALE

1 -1 $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - $\frac{1}{2}$
 *C D E F G Ab A B c
 Db Eb F Gb Ab A Bb C db
 D E F# G A A# B C# d
 Eb F G Ab Bb B C D eb
 E F# G# A B C C# D# e
 F G A Bb C Db D E f
 Gb Ab Bb B C# D Eb F gb
 G A B C D D# E F# g
 Ab Bb C Db Eb E F G ab
 A B C# D E F F# G# a
 Bb C D Eb F Gb G A bb
 B C# D# E F# G G# A# b

9-TONE SCALES:

#137 TCHEREPNIN

$\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - $\frac{1}{2}$
 C Db Eb E F G Ab A B c
 Db D E F Gb Ab A Bb C db
 D Eb F Gb G A Bb B C# d
 Eb E F# G Ab Bb B C D eb
 E F G Ab A B C Db Eb e
 F Gb Ab A Bb C Db D E f
 Gb G A Bb B C# D Eb F gb
 G G# A# B C D D# E F# g
 Ab A B C Db Eb E F G ab
 A Bb C C# D E F F# G# a
 Bb B C# D Eb F F# G A bb
 B C D Eb E F# G Ab Bb b

#133 HINDU

1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1
 C D E F Gb G A Bb c
 Db Eb F Gb G Ab Bb B db
 D E F# G G# A B C d
 Eb F G Ab A Bb C Db eb
 E F# G# A A# B C# D e
 F G A Bb B C D Eb f
 F# G# A# B C C# D# E f#
 *G A B C C# D E F g
 Ab Bb C Db D Eb F Gb ab
 A B C# D D# E F# G a
 Bb C D Eb E F G Ab bb
 B C# D# E F F# G# A b

#136 MIXOLYDIAN 8-TONE

1 -1 $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$
 *C D E F G A Bb B c
 Db Eb F Gb Ab Bb B C db
 D E F# G A B C C# d
 Eb F G Ab Bb C Db D eb
 E F# G# A B C# D D# e
 F G A Bb C D Eb E f
 Gb Ab Bb B C# D# E F gb
 *G A B C D E F F# g
 Ab Bb C Db Eb F Gb G ab
 A B C# D E F# G G# a
 Bb C D Eb F G Ab A bb
 B C# D# E F# G# A A# b

#138 LOCRIAN 9-TONE

$\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - 1
 C Db D Eb F Gb G Ab Bb c
 Db D Eb E F# G Ab A B db
 D Eb E F G Ab A Bb C d
 Eb E F Gb Ab A Bb B Db eb
 E F F# G A A# B C D e
 F Gb G Ab Bb B C Db Eb f
 F# G G# A B C C# D E f#
 G Ab A Bb C Db D Eb F g
 Ab A Bb B C# D Eb E Gb ab
 A A# B C D D# E F G a
 Bb B C Db Eb E F Gb Ab bb
 B C C# D E F F# G A b

*Uses only white piano keys except for one note

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

9-Tone Scales (cont'd):

#139 PHRYGIAN 9-TONE

$\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ - 1
 C D \flat D E \flat F G A \flat A B \flat c
 D \flat D E \flat E F \sharp G \sharp A B \flat B d \flat
 D D \sharp E F G A A \sharp B C d
 E \flat E F G \flat A \flat B \flat B C D \flat e \flat
 E F F \sharp G A B C C \sharp D e
 F G \flat G A \flat B \flat C D \flat D E \flat f
 F \sharp G G \sharp A B C \sharp D D \sharp E f \sharp
 G A \flat A B \flat C D E \flat E F g
 A \flat A B \flat B C \sharp D \sharp E F G \flat a \flat
 A A \sharp B C D E F F \sharp G a
 B \flat B C D \flat E \flat F G \flat G A \flat b \flat
 B C C \sharp D E F \sharp G G \sharp A b

#141 HINDU

$\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 - $\frac{1}{2}$
 C D \flat D E F \sharp G A \flat A B c
 D \flat D E \flat F G A \flat A B \flat C d \flat
 D D \sharp E F \sharp G \sharp A A \sharp B C \sharp d
 E \flat E F G A B \flat B C D e \flat
 E F F \sharp G \sharp A \sharp B C C \sharp D \sharp e
 F G \flat G A B C D \flat D E f
 G \flat G A \flat B \flat C D \flat D E \flat F g \flat
 G G \sharp A B C \sharp D D \sharp E F \sharp g
 A \flat A B \flat C D E \flat E F G a \flat
 A A \sharp B C \sharp D \sharp E F F \sharp G \sharp a
 B \flat B C D E F G \flat G A b \flat
 B C D \flat E \flat F G \flat G A \flat B \flat b

#143 BARTOK'S 9-TONE

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 C D E \flat E F F \sharp G A B c
 D \flat E \flat E F G \flat G A \flat B \flat C d \flat
 D E F F \sharp G G \sharp A B C \sharp d
 E \flat F G \flat G A \flat A B \flat C D e \flat
 E F \sharp G G \sharp A A \sharp B C \sharp D \sharp e
 F G A \flat A B \flat B C D E f
 G \flat A \flat A B \flat B C D \flat E \flat F g \flat
 G A A \sharp B C C \sharp D E F \sharp g
 A \flat B \flat B C D \flat D E \flat F G a \flat
 A B C C \sharp D D \sharp E F \sharp G \sharp a
 B \flat C D \flat D E \flat E F G A b \flat
 B C \sharp D D \sharp E F F \sharp G \sharp A \sharp b

#140 HINDU

$\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 - $\frac{1}{2}$
 C D \flat D E F F \sharp G A B c
 D \flat D E \flat F G \flat G A \flat B \flat C d \flat
 D D \sharp E F \sharp G G \sharp A B C \sharp d
 E \flat E F G A \flat A B \flat C D e \flat
 E F F \sharp G \sharp A A \sharp B C \sharp D \sharp e
 F G \flat G A B \flat B C D E f
 F \sharp G G \sharp A \sharp B C D \flat E \flat F f \sharp
 G A \flat A B C D \flat D E F \sharp g
 A \flat A B \flat C D \flat D E \flat F G a \flat
 A A \sharp B C \sharp D D \sharp E F \sharp G \sharp a
 B \flat B C D E \flat E F G A b \flat
 B C C \sharp D \sharp E F F \sharp G \sharp A \sharp b

#142 AUXILIARY BLUES

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ - 1
 C D E \flat E F F \sharp G A B \flat c
 D \flat E \flat E F G \flat G A \flat B \flat B d \flat
 D E F F \sharp G G \sharp A B C d
 E \flat F G \flat G A \flat A B \flat C D \flat e \flat
 E F \sharp G G \sharp A A \sharp B C \sharp D e
 F G A \flat A B \flat B C D E \flat f
 F \sharp G \sharp A A \sharp B C C \sharp D \sharp E f \sharp
 G A A \sharp B C C \sharp D E F g
 A \flat B \flat B C D \flat D E \flat F G \flat a \flat
 A B C C \sharp D D \sharp E F \sharp G a
 B \flat C D \flat D E \flat E F G A \flat b \flat
 B C \sharp D D \sharp E F F \sharp G \sharp A b

#144 AEOLIAN 9-TONE

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ - 1
 C D E \flat E F G A \flat A B \flat c
 D \flat E \flat E F G \flat A \flat A B \flat B d \flat
 D E F F \sharp G A A \sharp B C d
 E \flat F G \flat G A \flat B \flat B C D \flat e \flat
 E F \sharp G G \sharp A B C C \sharp D e
 F G A \flat A B \flat C D \flat D E \flat f
 F \sharp G \sharp A A \sharp B C \sharp D D \sharp E f \sharp
 G A A \sharp B C D D \sharp E F g
 A \flat B \flat B C D \flat E \flat E F G \flat a \flat
 A B C C \sharp D E F F \sharp G a
 B \flat C D \flat D E \flat F G \flat G A \flat b \flat
 B C \sharp D D \sharp E F \sharp G G \sharp A b

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

9-Tone Scales (cont'd):

#145 DORIAN 9-TONE

1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$
 C D E \flat E F G A B \flat B c
 D \flat E \flat E F G \flat A \flat B \flat B C d \flat
 D E F F \sharp G A B C C \sharp d
 E \flat F G \flat G A \flat B \flat C D \flat D e \flat
 E F \sharp G G \sharp A B C \sharp D D \sharp e
 F G A \flat A B \flat C D E \flat E f
 G \flat A \flat A B \flat B C \sharp D \sharp E F g \flat
 G A A \sharp B C D E F F \sharp g
 A \flat B \flat B C D \flat E \flat F G \flat G a \flat
 A B C C \sharp D E F \sharp G G \sharp a
 B \flat C D \flat D E \flat F G A \flat A b \flat
 B C \sharp D D \sharp E F \sharp G \sharp A A \sharp b

#147 RYO 9-TONE

1 -1 $-\frac{1}{2}$ $-\frac{1}{2}$ $-\frac{1}{2}$ -1 $-\frac{1}{2}$ $-\frac{1}{2}$ - $\frac{1}{2}$
 C D E F F \sharp G A B \flat B c
 D \flat E \flat F G \flat G A \flat B \flat B C d \flat
 D E F \sharp G G \sharp A B C D \flat d
 E \flat F G A \flat A B \flat C D \flat D e \flat
 E F \sharp G \sharp A A \sharp B C \sharp D D \sharp e
 F G A A \sharp B C D D \sharp E f
 G \flat A \flat B \flat B C D \flat E \flat E F g \flat
 G A B C C \sharp D E F F \sharp g
 A \flat B \flat C D \flat D E \flat F G \flat G a \flat
 A B C \sharp D D \sharp E F \sharp G G \sharp a
 B \flat C D E \flat E F G A \flat A b \flat
 B C \sharp D \sharp E F F \sharp G \sharp A A \sharp b

5-TONE SCALES:

#153 SEMITONAL PENT.#4

$\frac{1}{2}$ -1 $-1\frac{1}{2}$ -1 -2
 C D \flat E \flat F \sharp A \flat c
 *D \flat D E G A d \flat
 D E \flat F A \flat B \flat d
 E \flat E G \flat A B e \flat
 *E F G B \flat C e
 F G \flat A \flat B D \flat f
 *F \sharp G A C D f \sharp
 G A \flat B \flat D \flat E \flat g
 *A \flat A B D E a \flat
 A B \flat C E \flat F a
 B \flat B D \flat E G \flat b \flat
 **B C D F G b

#154 JAPANESE

$1\frac{1}{2}$ $-1\frac{1}{2}$ -1 -1 -1
 C E \flat G \flat A \flat B \flat c
 *D \flat E G A B d \flat
 D F G \sharp A \sharp C d
 E \flat G \flat A B D \flat e \flat
 *E G B \flat C D e
 F A \flat B D \flat E \flat f
 *G \flat A C D E g \flat
 G B \flat D \flat E \flat F g
 A \flat B D E F \sharp a \flat
 *A C E \flat F G a
 B \flat D \flat E G \flat A \flat b \flat
 **B D F G A b

#155 PELOG #1

$\frac{1}{2}$ -1 -2 $-\frac{1}{2}$ -2
 C D \flat E \flat G A \flat c
 D \flat D E G \sharp A d \flat
 D E \flat F A B \flat d
 E \flat E F \sharp A \sharp B e \flat
 **E F G B C e
 F G \flat A \flat C D \flat f
 F \sharp G A C \sharp D f \sharp
 G A \flat B \flat D E \flat g
 A \flat A B D \sharp E a \flat
 *A B \flat C E F a
 B \flat B D \flat F G \flat b \flat
 *B C D F \sharp G b

#156 PELOG #4

$\frac{1}{2}$ -2 $-\frac{1}{2}$ -1 -2
 C D \flat F G \flat A \flat c
 D \flat D F \sharp G A d \flat
 D E \flat G A \flat B \flat d
 E \flat E G \sharp A B e \flat
 *E F A B \flat C e
 F G \flat A \sharp B D \flat f
 *F \sharp G B C D f \sharp
 G A \flat C D \flat E \flat g
 A \flat A C \sharp D E a \flat
 A B \flat D E \flat F a
 B \flat B D \sharp E G \flat b \flat
 **B C E F G b

#157 HIRAJOSHI #2

$\frac{1}{2}$ -2 $-\frac{1}{2}$ -2 -1
 C D \flat F G \flat B \flat c
 D \flat D F \sharp G B d \flat
 D E \flat G A \flat C d
 E \flat E G \sharp A D \flat e \flat
 *E F A B \flat D e
 F G \flat A \sharp B E \flat f
 *F \sharp G B C E f \sharp
 G A \flat C D \flat F g
 A \flat A C \sharp D G \flat a \flat
 A B \flat D E \flat G a
 B \flat B D \sharp E A \flat b \flat
 **B C E F A b

#158 PENTATONIC #5

$1\frac{1}{2}$ -1 $-1\frac{1}{2}$ -1 -1
 C E \flat F A \flat B \flat c
 D \flat E G \flat A B d \flat
 *D F G B \flat C d
 E \flat G \flat A \flat B D \flat e \flat
 **E G A C D e
 F A \flat B \flat D \flat E \flat f
 *F \sharp A B D E f \sharp
 G B \flat C E \flat F g
 A \flat B D \flat E G \flat a \flat
 **A C D F G a
 ***B \flat D \flat E \flat G \flat A \flat b \flat
 **B D E G A b

*Uses only white piano keys except for one note

**Uses only white piano keys (see page 785)

***Uses only (and all) black keys on piano (see page 788)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

5-Tone Scales (cont'd):

#159 KUMOI #5

$1\frac{1}{2}$ - 1- $\frac{1}{2}$ - 2- 1
 C E \flat F G \flat B \flat c
 D \flat E F \sharp G B d \flat
 *D F G A \flat C d
 E \flat F \sharp G \sharp A D \flat e \flat
 *E G A B \flat D e
 F G \sharp A \sharp B D \sharp f
 *F \sharp A B C E f \sharp
 G B \flat C D \flat F g
 A \flat B C \sharp D G \flat a \flat
 *A C D E \flat G a
 B \flat C \sharp D \sharp E A \flat b \flat
 **B D E F A b

#160 JAVANESE

$\frac{1}{2}$ - 1- 1- $1\frac{1}{2}$ - 2
 C D \flat E \flat F A \flat c
 D \flat D E G \flat A d \flat
 D E \flat F G B \flat d
 E \flat E G \flat A \flat B e \flat
 **E F G A C e
 F G \flat A \flat B \flat D \flat f
 *F \sharp G A B D f \sharp
 G A \flat B \flat C E \flat g
 A \flat A B D \flat E a \flat
 *A B \flat C D F a
 B \flat B D \flat E \flat G \flat b \flat
 **B C D E G b

#161 SEMITONAL PENT.#1

$1\frac{1}{2}$ - 1- 2- $\frac{1}{2}$ - 1
 C E \flat F A B \flat c
 D \flat E F \sharp A \sharp B d \flat
 **D F G B C d
 E \flat G \flat A \flat C D \flat e \flat
 *E G A C \sharp D e
 F A \flat B \flat D E \flat f
 F \sharp A B D \sharp E f \sharp
 *G B \flat C E F g
 A \flat B D \flat F G \flat a \flat
 *A C D F \sharp G a
 B \flat D \flat E \flat G A \flat b \flat
 *B D E G \sharp A b

#162 HIRAJOSHI #4

$\frac{1}{2}$ -2 -1 - $\frac{1}{2}$ - 2
 C D \flat F G A \flat c
 D \flat D F \sharp G \sharp A d \flat
 D E \flat G A B \flat d
 E \flat E G \sharp A \sharp B e \flat
 **E F A B C e
 F G \flat B \flat C D \flat f
 F \sharp G B C \sharp D f \sharp
 G A \flat C D E \flat g
 A \flat A C \sharp D \sharp E a \flat
 *A B \flat D E F a
 B \flat B E \flat F G \flat b \flat
 *B C E F \sharp G b

#163 KUMOI #2

$\frac{1}{2}$ -2 -1 - $1\frac{1}{2}$ - 1
 C D \flat F G B \flat c
 D \flat D G \flat A \flat B d \flat
 *D E \flat G A C d
 E \flat E A \flat B \flat D \flat e \flat
 **E F A B D e
 F G \flat B \flat C E \flat f
 F \sharp G B C \sharp E f \sharp
 *G A \flat C D F g
 A \flat A D \flat E \flat G \flat a \flat
 *A B \flat D E G a
 B \flat B E \flat F A \flat b \flat
 *B C E F \sharp A b

#164 PENTATONIC #2

$1\frac{1}{2}$ - 1- 1- $1\frac{1}{2}$ - 1
 C E \flat F G B \flat c
 D \flat E G \flat A \flat B d \flat
 **D F G A C d
 ***E \flat G \flat A \flat B \flat D \flat e \flat
 **E G A B D e
 F A \flat B \flat C E \flat f
 F \sharp A B C \sharp E f \sharp
 *G B \flat C D F g
 A \flat B D \flat E \flat G \flat a \flat
 **A C D E G a
 B \flat D \flat E \flat F A \flat b \flat
 *B D E F \sharp A b

#165 JAPANESE PENT.#4

$\frac{1}{2}$ -2 -1 -1 - $1\frac{1}{2}$
 *C D \flat F G A c
 D \flat D G \flat A \flat B \flat d \flat
 *D E \flat G A B d
 E \flat E A \flat B \flat C e \flat
 *E F A B C \sharp e
 F G \flat B \flat C D f
 F \sharp G B C \sharp D f \sharp
 *G A \flat C D E g
 A \flat A D \flat E \flat F a \flat
 A B \flat D E F \sharp a
 B \flat B E \flat F G b \flat
 B C E F \sharp G \sharp b

#166 JAZZ MINOR PENT.

$1\frac{1}{2}$ - 1- 1- $1\frac{1}{2}$ -
 *C E \flat F G A c
 D \flat E G \flat A \flat B \flat d \flat
 **D F G A B d
 E \flat G \flat A \flat B \flat C e \flat
 *E G A B C \sharp e
 F A \flat B \flat C D f
 G \flat A B D \flat E \flat g \flat
 *G A \sharp C D E g
 A \flat B D \flat E \flat F a \flat
 A C D E F \sharp a
 B \flat D \flat E \flat F G b \flat
 B D E F \sharp A \sharp b

#167 KUMOI #3

2 -1 - $1\frac{1}{2}$ -1 - $\frac{1}{2}$
 *C E F \sharp A B c
 D \flat F G B \flat C d \flat
 D F \sharp G \sharp B C \sharp d
 *E \flat G A C D e \flat
 E G \sharp A \sharp C \sharp D \sharp e
 **F A B D E f
 G \flat B \flat C E \flat F g \flat
 G B C \sharp E F \sharp g
 *A \flat C D F G a \flat
 A C \sharp D \sharp F \sharp G \sharp a
 *B \flat D E G A b \flat
 B D \sharp F G \sharp A \sharp b

*Uses only white piano keys except for one note

(cont'd)

**Uses only white piano keys (see page 785)

***Uses only (and all) black piano keys (see page 788)

Chart #101: Scales in 12 Keys Each (cont'd)

5-Tone Scales (cont'd):

#168 JAPANESE PENT.#5

2 -1 -1 -1½- ½
 C E F# G# B c
 *Db F G A C db
 D F# G# A# C# d
 *Eb G A B D eb
 E G# A# C D# e
 *F A B C# E f
 Gb Bb C D F gb
 G B C# D# F# g
 *Ab C D E G ab
 A C# D# F G# a
 Bb D E Gb A bb
 B D# F G A# b

#169 DIMINISHED PENT.

1½- ½- 1- 2- 1
 C D# E F# A# c
 *Db E F G B db
 D F Gb Ab C d
 Eb F# G A Db eb
 E G Ab Bb D e
 F G# A B D# f
 Gb A Bb C E gb
 G A# B C# F g
 Ab B C D Gb ab
 A C Db Eb G a
 Bb C# D E Ab bb
 *B D Eb F A b

#170 JAZZ DOMINANT PNT.

½ -1½ -1 -2 - 1
 C Db E Gb Bb c
 *Db D F G B db
 D Eb Gb Ab C d
 Eb E G A Db eb
 E F G# A# D e
 F Gb A B Eb f
 F# G Bb C E f#
 G Ab B Db F g
 Ab A C D Gb ab
 A Bb Db Eb G a
 Bb B D E Ab bb
 B C Eb F A b

#171 JAPANESE PENT.#3

1½- ½- 2- 1- 1
 C D# E G# A# c
 *Db E F A B db
 D F Gb Bb C d
 Eb F# G B Db eb
 *E G Ab C D e
 F G# A C# D# f
 Gb A Bb D E gb
 G A# B D# F g
 Ab B C E Gb ab
 *A C Db F G a
 Bb C# D Gb Ab bb
 *B D Eb G A b

#172 VIBHASA

½-1½ -1 -1½-1½
 C Db E F# A c
 Db D F G Bb db
 D Eb Gb Ab B d
 *Eb E G A C eb
 E F Ab Bb Db e
 F Gb A B D f
 F# G A# C D# f#
 G Ab B Db E g
 *Ab A C D F ab
 A Bb Db Eb Gb a
 *Bb B D E G bb
 B C D# F G# b

#173 HIRAJOSHI #5

2 -1 -½ -2 - ½
 *C E F# G B c
 Db F G Ab C db
 D F# G# A C# d
 Eb G A Bb D eb
 E G# A# B D# e
 **F A B C E f
 Gb Bb C Db F gb
 G B C# D F# g
 Ab C D Eb G ab
 A C# D# E G# a
 *Bb D E F A bb
 B D# F Gb A# b

#174 PENT.-DOMINANT

1½-½ -1½-1½- 1
 C D# E G Bb c
 Db E F Ab B db
 *D F Gb A C d
 Eb F# G Bb Db eb
 *E G Ab B D e
 F G# A C D# f
 Gb A Bb Db E gb
 *G A# B D F g
 Ab B C Eb Gb ab
 *A C Db E G a
 Bb C# D F Ab bb
 B D Eb Gb A b

#175 REWA

½ -1½-1½- ½- 2
 C Db E G Ab c
 Db D F G# A db
 D Eb F# A Bb d
 Eb E G A# B eb
 *E F G# B C e
 F Gb A C Db f
 F# G A# C# D f#
 G Ab B D Eb g
 Ab A C D# E ab
 A Bb Db E F a
 Bb B D F Gb bb
 B C D# F# G b

#176 DOMINANT PENT.

½ -1½-1½-1½- 1
 C Db E G Bb c
 Db D F Ab B db
 D Eb Gb A C d
 Eb E G Bb Db eb
 *E F G# B D e
 F Gb A C Eb f
 F# G A# C# E f#
 G Ab B D F g
 Ab A C Eb Gb ab
 A Bb Db E G a
 Bb B D F Ab bb
 B C D# F# A b

*Uses only white piano keys except for one note

**Uses only white piano keys (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

5-Tone Scales (cont'd):

#177 SCRIBIN

$\frac{1}{2}$ $-1\frac{1}{2}$ $-1\frac{1}{2}$ -1 $-1\frac{1}{2}$
 *C D \flat E G A c
 D \flat D F A \flat B \flat d \flat
 D E \flat G \flat A B d
 E \flat E G B \flat C e \flat
 E F G \sharp B C \sharp e
 *F G \flat A C D f
 F \sharp G B \flat D \flat E \flat f \sharp
 *G A \flat B D E g
 A \flat A C E \flat F a \flat
 A B \flat D \flat E G \flat a
 *B \flat B D F G b \flat
 B C D \sharp F \sharp G \sharp b

#178 HIRAJOSHI #3

2 $-\frac{1}{2}$ -2 -1 $-\frac{1}{2}$
 **C E F A B c
 D \flat F G \flat B \flat C d \flat
 D F \sharp G B C \sharp d
 E \flat G A \flat C D e \flat
 E G \sharp A C \sharp D \sharp e
 *F A B \flat D E f
 F \sharp A \sharp B D \sharp F f \sharp
 *G B C E F \sharp g
 A \flat C D \flat F G a \flat
 A C \sharp D F \sharp G \sharp a
 B \flat D E \flat G A b \flat
 B D \sharp E G \sharp A \sharp b

#179 PELOG #3

2 $-\frac{1}{2}$ -2 $-\frac{1}{2}$ -1
 *C E F A B \flat c
 D \flat F G \flat A \sharp B d \flat
 *D F \sharp G B C d
 E \flat G A \flat C D \flat e \flat
 E G \sharp A C \sharp D e
 F A B \flat D E \flat f
 F \sharp A \sharp B D \sharp E f \sharp
 **G B C E F g
 A \flat C D \flat F G \flat a \flat
 A C \sharp D F \sharp G a
 B \flat D E \flat G A \flat b \flat
 B D \sharp E G \sharp A b

#180 PELOG #5

2 $-\frac{1}{2}$ -1 -2 $-\frac{1}{2}$
 **C E F G B c
 D \flat F G \flat A \flat C d \flat
 D F \sharp G A C \sharp d
 E \flat G A \flat B \flat D e \flat
 E G \sharp A B D \sharp e
 *F A B \flat C E f
 G \flat A \sharp B D \flat F g \flat
 *G B C D F \sharp g
 A \flat C D \flat E \flat G a \flat
 A C \sharp D E G \sharp a
 B \flat D E \flat F A b \flat
 B D \sharp E F \sharp A \sharp b

#181 SEMITONAL PENT.#3

2 $-\frac{1}{2}$ -1 $-1\frac{1}{2}$ -1
 *C E F G B \flat c
 D \flat F G \flat A \flat B d \flat
 *D F \sharp G A C d
 E \flat G A \flat B \flat D \flat e \flat
 *E G \sharp A B D e
 F A B \flat C E \flat f
 F \sharp A \sharp B C \sharp E f \sharp
 **G B C D F g
 A \flat C D \flat E \flat G \flat a \flat
 *A C \sharp D E G a
 B \flat D E \flat F A \flat b \flat
 B D \sharp E F \sharp A b

#182 BULGARIAN

2 $-\frac{1}{2}$ -1 -1 $-1\frac{1}{2}$
 **C E F G A c
 D \flat F G \flat A \flat B \flat d \flat
 *D F \sharp G A B d
 E \flat G A \flat B \flat C e \flat
 E G \sharp A B C \sharp e
 *F A B \flat C D f
 F \sharp A \sharp B C \sharp D \sharp f \sharp
 **G B C D E g
 A \flat C D \flat E \flat F a \flat
 A C \sharp D E F \sharp a
 B \flat D E \flat F G b \flat
 B D \sharp E F \sharp G \sharp b

#183 PELOG #2

1 -2 $-\frac{1}{2}$ -2 $-\frac{1}{2}$
 *C D F \sharp G B c
 D \flat E \flat G A \flat C d \flat
 D E G \sharp A C \sharp d
 E \flat F A B \flat D e \flat
 E F \sharp A \sharp B D \sharp e
 **F G B C E f
 G \flat A \flat C D \flat F g \flat
 G A C \sharp D F \sharp g
 A \flat B \flat D E \flat G a \flat
 A B D \sharp E G \sharp a
 *B \flat C E F A b \flat
 B C \sharp F G \flat A \sharp b

#184 HIRAJOSHI #1

1 $-\frac{1}{2}$ -2 $-\frac{1}{2}$ -2
 C D E \flat G A \flat c
 D \flat E \flat E G \sharp A d \flat
 *D E F A B \flat d
 E \flat F G \flat A \sharp B e \flat
 *E F \sharp G B C e
 F G A \flat C D \flat f
 F \sharp G \sharp A C \sharp D f \sharp
 G A B \flat D E \flat g
 A \flat B \flat B D \sharp E a \flat
 **A B C E F a
 B \flat C D \flat F G \flat b \flat
 B C \sharp D F \sharp G b

#185 AFRICAN

1 $-\frac{1}{2}$ -2 $-1\frac{1}{2}$ -1
 C D E \flat G B \flat c
 D \flat E \flat E A \flat B d \flat
 **D E F A C d
 E \flat F G \flat B \flat D \flat e \flat
 *E F \sharp G B D e
 F G A \flat C E \flat f
 F \sharp G \sharp A C \sharp E f \sharp
 *G A B \flat D F g
 A \flat B \flat B E \flat G \flat a \flat
 **A B C E G a
 B \flat C D \flat F A \flat b \flat
 B C \sharp D F \sharp A b

*Uses only white piano keys except for one note

**Uses only white piano keys (see page 785)

(cont'd)

Chart #101: Scales in 12 Keys Each (cont'd)

5-Tone Scales (cont'd):

#186 KUMOI #1

1 - $\frac{1}{2}$ -2 -1 -1 $\frac{1}{2}$
 C D E \flat G A c
 D \flat E \flat E A \flat B \flat d \flat
 **D E F A B d
 E \flat F G \flat B \flat C e \flat
 E F \sharp G B C \sharp e
 *F G A \flat C D f
 F \sharp G \sharp A C \sharp D \sharp f \sharp
 *G A B \flat D E g
 A \flat B \flat B E \flat F a \flat
 *A B C E F \sharp a
 B \flat C D \flat F G b \flat
 B C \sharp D F \sharp G \sharp b

#187 SEMITONAL PENT.#2

1 -2 - $\frac{1}{2}$ -1 -1 $\frac{1}{2}$
 *C D F \sharp G A c
 D \flat E \flat G A \flat B \flat d \flat
 *D E G \sharp A B d
 E \flat F A B \flat C e \flat
 E F \sharp A \sharp B C \sharp e
 **F G B C D f
 G \flat A \flat C D \flat E \flat g \flat
 *G A C \sharp D E g
 A \flat B \flat D E \flat F a \flat
 A B D \sharp E F \sharp a
 *B \flat C E F G b \flat
 B C \sharp F G \flat A \flat b

#188 JAPAN. PENT.#2

1 -1 $\frac{1}{2}$ - $\frac{1}{2}$ -2 -1
 C D F G \flat B \flat c
 D \flat E \flat F \sharp G B d \flat
 *D E G A \flat C d
 E \flat F G \sharp A D \flat e \flat
 E F \sharp A B \flat D e
 F G A \sharp B D \sharp f
 F \sharp G \sharp B C E f \sharp
 *G A C D \flat F g
 A \flat B \flat C \sharp D G \flat a \flat
 *A B D E \flat G a
 B \flat C D \sharp E A \flat b \flat
 *B C \sharp E F A b

#189 SEMITONAL PENT.#5

1 -1 $\frac{1}{2}$ -1 -2 - $\frac{1}{2}$
 **C D F G B c
 D \flat E \flat G \flat A \flat C d \flat
 *D E G A C \sharp d
 E \flat F A \flat B \flat D e \flat
 E F \sharp A B D \sharp e
 *F G B \flat C E f
 G \flat A \flat B D \flat F g \flat
 *G A C D F \sharp g
 A \flat B \flat D \flat E \flat G a \flat
 *A B D E G \sharp a
 B \flat C E \flat F A b \flat
 B C \sharp E F \sharp A \sharp b

#190 KUMOI #4

1 -1 $\frac{1}{2}$ -1 - $\frac{1}{2}$ -2
 *C D F G A \flat c
 D \flat E \flat F \sharp G \sharp A d \flat
 *D E G A B \flat d
 E \flat F G \sharp A \sharp B e \flat
 *E F \sharp A B C e
 F G B \flat C D \flat f
 F \sharp G \sharp B D \sharp D f \sharp
 *G A C D E \flat g
 A \flat B \flat C \sharp D \sharp E a \flat
 **A B D E F a
 B \flat C E \flat F G \flat b \flat
 B C \sharp E F \sharp G b

#191 PENTATONIC #4

1 -1 $\frac{1}{2}$ -1 -1 $\frac{1}{2}$ -1
 *C D F G B \flat c
 D \flat E \flat G \flat A \flat B d \flat
 **D E G A C d
 E \flat F A \flat B \flat D \flat e \flat
 *E F \sharp A B D e
 *F G B \flat C E \flat f
 F \sharp G \sharp B C \sharp E f \sharp
 **G A C D F g
 ***A \flat B \flat D \flat E \flat G \flat a \flat
 **A B D E G a
 B \flat C E \flat F A \flat b \flat
 B C \sharp E F \sharp A b

#192 PENTATONIC #1

1 -1 $\frac{1}{2}$ -1 -1 -1 $\frac{1}{2}$
 **C D F G A c
 ***D \flat E \flat G \flat A \flat B \flat d \flat
 **D E G A B d
 E \flat F A \flat B \flat C e \flat
 E F \sharp A B C \sharp e
 *F G B \flat C D f
 G \flat A \flat B D \flat E \flat g \flat
 **G A C D E g
 A \flat B \flat D \flat E \flat F a \flat
 *A B D E F \sharp a
 B \flat C E \flat F G b \flat
 B C \sharp E F \sharp G \sharp b

#193 JAZZ PENTATONIC

1 -1 -1 -2 -1
 C D E F \sharp A \sharp c
 D \flat E \flat F G B d \flat
 D E F \sharp G \sharp C d
 E \flat F G A D \flat e \flat
 E F \sharp G \sharp A \sharp D e
 *F G A B E \flat f
 F \sharp G \sharp A \sharp C E f \sharp
 *G A B C \sharp F g
 A \flat B \flat C D G \flat a \flat
 A B C \sharp D \sharp G a
 B \flat C D E A \flat b \flat
 B C \sharp D \sharp F A b

#194 INDIA

1 -1 -1 $\frac{1}{2}$ -2 - $\frac{1}{2}$
 **C D E G B c
 D \flat E \flat F A \flat C d \flat
 D E F \sharp A C \sharp d
 E \flat F G B \flat D e \flat
 E F \sharp G \sharp B D \sharp e
 **F G A C E f
 G \flat A \flat B \flat D \flat F g \flat
 *G A B D F \sharp g
 A \flat B \flat C E \flat G a \flat
 A B C \sharp E G \sharp a
 *B \flat C D F A b \flat
 B C \sharp D \sharp F \sharp A \sharp b

*Uses only white piano keys except for one note

(cont'd)

**Uses only white piano keys (see page 785)

***Uses only (and all) black piano keys (see page 788)

Chart #101: Scales in 12 Keys Each (cont'd)

5-Tone Scales (cont'd):

#195 JAPANESE PENT.#1

1 -1 -1½- ½- 2
 *C D E G A♭ c
 D♭ E♭ F G♯ A d♭
 D E F♯ A B♭ d
 E♭ F G A♯ B e♭
 E F♯ G♯ B C e
 *F G A C D♭ f
 F♯ G♯ A♯ C♯ D f♯
 *G A B D E♭ g
 A♭ B♭ C D♯ E a♭
 *A B C♯ E F a
 B♭ C D F G♭ b♭
 B C♯ D♯ F♯ G b

#197 PENTATONIC #3

1 -1 -1½- 1-1½
 **C D E G A c
 D♭ E♭ F A♭ B♭ d♭
 *D E F♯ A B d
 E♭ F G B♭ C e♭
 E F♯ G♯ B C♯ e
 **F G A C D f
 ***G♭ A♭ B♭ D♭ E♭ g♭
 **G A B D E g
 A♭ B♭ C E♭ F a♭
 A B C♯ E F♯ a
 *B♭ C D F G b♭
 B C♯ D♯ F♯ G♯ b

#196 AFRICAN

1 -1 -1½-1½- 1
 *C D E G B♭ c
 D♭ E♭ F A♭ B d♭
 *D E F♯ A C d
 E♭ F G B♭ D♭ e♭
 E F♯ G♯ B D e
 *F G A C E♭ f
 G♭ A♭ B♭ D♭ E g♭
 **G A B D F g
 A♭ B♭ C E♭ G♭ a♭
 *A B C♯ E G a
 B♭ C D F A♭ b♭
 B C♯ D♯ F♯ A b

#198 AFRICAN

1 - 1- ½- 2-1½
 **C D E F A c
 D♭ E♭ F G♭ B♭ d♭
 *D E F♯ G B d
 E♭ F G A♭ C e♭
 E F♯ G♯ A C♯ D♯
 *F G A B♭ D f
 F♯ G♯ A♯ B D♯ f♯
 **G A B C E g
 A♭ B♭ C D♭ F a♭
 A B C♯ D F♯ a
 B♭ C D E♭ G b♭
 B C♯ D♯ E G♯ b

*Uses only white piano keys except for one note

**Uses only white piano keys (see page 785)

***Uses only (and all) black piano keys (see page 788)

End of Chart #101

SCALES IN DIFFERENT KEYS THAT USE ONLY THE *WHITE* KEYS OF PIANO **CHART #102**

STARTING ON "C":**7-Tone Scale:**

#1 Major (Ionian) C D E F G A B c

6-Tone Scales:

#86 Ionian 6-Tone C D F G A B c

#96 Scotch C D E G A B c

#103 Guido's C D E F G A c

#178 Hirajoshi #3 C E F A B c

5-Tone Scales:

#180 Pelog #5 C E F G B c

#182 Bulgarian C E F G A c

#189 Semitonal Pentatonic #5 C D F G B c

#192 Pentatonic #1 C D F G A c

#194 India C D E G B c

#197 Pentatonic #3 C D E G A c

#198 African C D E F A c

STARTING ON "D":**7-Tone Scale:**

#50 Dorian D E F G A B C d

6-Tone Scales:

#77 Dorian 6-Tone D F G A B C d

#95 Appalachian D E G A B C d

#88 Akebono D E F A B C d

#92 Greek D E F G A C d

#94 Hungarian D E F G A B d

5-Tone Scales:

#161 Semitonal Pentatonic #1 D F G B C d

#164 Pentatonic #2 D F G A C d

#166 Jazz minor Pentatonic D F G A B d

#192 Pentatonic #1 D E G A B d

#191 Pentatonic #4 D E G A C d

#186 Kumoi #1 D E F A B d

#185 African D E F A C d

(cont'd)

 Chart #102: Scales Using Only White Piano Keys (cont'd)

STARTING ON "E":**7-Tone Scale:**

#15 Phrygian E F G A B C D e

6-Tone Scales:

#75 Irish E G A B C D e

#73 In Scale E F A B C D e

#72 Phrygian 6-Tone E F G A C D e

#74 Samanta E F G A B C e

5-Tone Scales:

#160 Javanese E F G A C e

#155 Pelog #1 E F G B C e

#158 Pentatonic #5 E G A C D e

#162 Hirajoshi #4 E F A B C e

#163 Kumoi #2 E F A B D e

#164 Pentatonic #2 E G A B D e

STARTING ON "F":**7-Tone Scale:**

#51 Lydian F G A B C D E f

6-Tone Scales:

#96 Scotch F G A C D E f

#99 Lydian 6-Tone F G A B C D f

5-Tone Scales:

#167 Kumoi #3 F A B D E f

#173 Hirajoshi #5 F A B C E f

#183 Pelog #2 F G B C E f

#187 Semitonal Pentatonic #2 F G B C D f

#194 India F G A C E f

#197 Pentatonic #3 F G A C D f

 (cont'd)

Chart #102: Scales Using Only White Piano Keys (cont'd)

STARTING ON "G":**7-Tone Scale:**

#62	Mixolydian	G	A	B	C	D	E	F	g
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6-Tone Scales:

#85	Polish	G		B	C	D	E	F	g
#95	Appalachian	G	A		C	D	E	F	g
#100	Scotch	G	A	B		D	E	F	g
#102	Mixolydian 6-Tone	. . . . .	G	A	B	C	D		F	g
#103	Guido's	. . . . .	G	A	B	C	D	E		g

5-Tone Scales:

#179	Pelog #3	. . . . .	G		B	C		E	F	g
#181	Semitonal Pentatonic #3	. . . . .	G		B	C	D		F	g
#182	Bulgarian	. . . . .	G		B	C	D	E		g
#191	Pentatonic #4	. . . . .	G	A		C	D		F	g
#192	Pentatonic #1	. . . . .	G	A		C	D	E		g
#196	African	. . . . .	G	A	B		D		F	g
#197	Pentatonic #3	G	A	B		D	E		g
#198	African	G	A	B	C		E		g

STARTING ON "A":**7-Tone Scale:**

#49	Natural minor	A	B	C	D	E	F	G	a
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6-Tone Scales:

#75	Irish	A			C	D	E	F	G	a
#90	Aeolian 6-Tone	A	B		C	D		F	G	a
#92	Greek	A	B		C	D	E		G	a
#93	Glinka's	A	B		C	D	E	F		a

5-Tone Scales:

#158	Pentatonic #5	. . . . .	A			C	D		F	G	a
#164	Pentatonic #2	. . . . .	A			C	D	E		G	a
#185	African	. . . . .	A	B		C		E		G	a
#184	Hirajoshi #1	. . . . .	A	B		C		E	F		a
#191	Pentatonic #4	. . . . .	A	B			D	E		G	a
#190	Kumoi #4	. . . . .	A	B			D	E	F		a

(cont'd)

 Chart #102: Scales Using Only White Piano Keys (cont'd)

STARTING ON "B":**7-Tone Scale:**

#12 Locrian B C D E F G A b

6-Tone Scales:

#72 Phrygian 6-Tone B C D E G A b

#71 Abuselik B C E F G A b

#68 Locrian 6-Tone B C D F G A b

5-Tone Scales:

#154 Japanese B D F G A b

#158 Pentatonic #5 B D E G A b

#159 Kumoi #5 B D E F A b

#157 Hirajoshi #2 B C E F A b

#156 Pelog #4 B C E F G b

#153 Semitonal Pentatonic #4 B C D F G b

#160 Javanese B C D E G b

 End of Chart #102
THE PENTATONIC MODES USING ONLY & ALL OF THE *BLACK* PIANO KEYS**CHART #103**

#192	Pentatonic #1	. . . .	D \flat	E \flat	G \flat	A \flat	B \flat	d \flat					
#164	Pentatonic #2	. . . . .	E \flat	G \flat	A \flat	B \flat	D \flat	e \flat					
#197	Pentatonic #3	. . . . .		G \flat	A \flat	B \flat	D \flat	E \flat	g \flat				
#191	Pentatonic #4	. . . . .			A \flat	B \flat	D \flat	E \flat	G \flat	a \flat			
#158	Pentatonic #5	. . . . .				B \flat	D \flat	E \flat	G \flat	A \flat	b \flat		

End of Chart #103

CHAPTER 31

SOURCES OF INDIVIDUAL SCALES & BIBLIOGRAPHY

CONTENTS OF CHAPTER 31:

A Few Words Concerning Sources of Scales	Page 791
Sources of Individual Scales in This Book	791
Bibliography	797

A FEW WORDS CONCERNING SOURCES OF SCALES

Some of the scales in this book were found in numerous source materials; others were found in only one. Below is a list of all of the scales with only one source given for each. Sometimes the Scale Name in the source is different from the name I used for the scale throughout this book, but often many different names were found for one scale. I chose one name to use, but all of the other names I found are given in The Grand Finale under each particular scale. Also, all names I found for all of the scales in this book are listed alphabetically with Scale Numbers in the Scale Name Index, starting on page 81.

Back to the sources. Actually 28 (14.1%) of the 198 scales in this book don't have the reference to show where I found them -- but that is a long story. See Criticism #5 on page 14 for a full explanation -- and remember, *my* source materials did *not* give individual source names and page numbers for *their* scales. So I don't feel under any obligation to be "100% perfect" -- 85.9% perfect will just have to do it!

NOTE: See the complete Bibliography starting on page 797 for the complete names of the authors and the titles of books, etc. Only the last name of the author is given here under Scale Sources.

NOTE: The Scale Numbers may be used to look up any individual scale in The Grand Finale (which starts on page 405) for all of the information contained in this book about that particular scale.

SCALES SOURCES

7-TONE SCALES:

#1 Major	.....	New International Ency., Vol. 16, p. 61
#2 Ananda	.....	Danielou, #2, p. 121
#3 Chromatic Mixolydian	.....	Vincent, p. 157
#4 Chromatic Dorian	.....	Vincent, p. 157
#5 Jewish	.....
#6 Neapolitan-Major	.....	Persichetti, p. 44
#7 Polish	.....	New Groves Dict. of Music, Vol 15, p 31
#8 Super-Locrian	.....	Persichetti, p. 44
#9 Chromatic Hypophrygian	.....	Vincent, p. 157
#10 Raga Todi	.....	Colin, p. 311
#11 Byzantine	.....	Groves Dict., Vol. I, p. 1074
#12 Locrian	.....	New International Ency., Vol. 16, p. 61
#13 Hijazi	.....	Harvard Dict. of Music, 2nd ed., p. 47
#14 Neapolitan-minor	.....	Colin, p. 310

(cont'd)

Scale Sources (cont'd)

#15	Phrygian	New International Ency., Vol. 16, p. 61
#16	Javanese	Colin, p. 310
#17	Marava	Danielou, #2, p. 59
#18	Blues	Middlebrook, p. 93
#19	Enigmatic	Slonimsky, p. 145
#20	Chromatic Hypolydian	Vincent, p. 157
#21	India	Malm, p. 76
#22	Hungarian-Major	Colin, p. 308
#23	Chromatic Lydian	Vincent, p. 157
#24	Enigmatic, des-inv.	Groves Dict., Vol. VII, p. 442
#25	Chromatic Phrygian	Vincent, p. 157
#26	Persian	Colin, p. 311
#27	Rahawi	Daniel, p. 183
#28	Oriental	Persichetti, p. 44
#29	Persian	
#30	Double Harmonic	Persichetti, p. 44
#31	Spanish	Colin, p.310
#32	Roumanian-Major	
#33	Arabic	Groves Dict., Vol. III, P. 272
#34	Melodic minor	Slonimsky, p. 139
#35	Arezzo	Groves Dict., Vol. III, p. 300
#36	Basque	
#37	Lydian-Diminished	Russell, p. 5
#38	Conway's 7-Tone	given to me by Bud Conway himself
#39	Turkish	
#40	Hungarian-minor	Golden Encycl. of Music, p. 504
#41	Chromatic Hypodorian	Vincent, p. 157
#42	Greek	Groves Dict., Vol. III, p. 272
#43	Greek	Groves Dict., Vol. III, p. 272
#44	Roumanian-minor	Colin, p. 311
#45	Half-Diminished	Mann, p. 207
#46	Zangula	Harvard Dict. of Music, 2nd ed., p. 47
#47	Harmonic minor	Slonimsky, p. 151
#48	Ptolemy's Mixed Hypodorian	Vincent, p. 162
#49	Natural minor	Colin, p. 308
#50	Dorian	New International Ency., Vol. 16, p. 61
#51	Lydian	New International Ency., Vol. 16, p. 61
#52	Lydian-Augmented	Russell, p. 4
#53	Leading Whole Tone	Persichetti, p. 44
#54	Lydian-minor	Persichetti, p. 44

(cont'd)

Scale Sources (cont'd)

#55	Overtone	Slonimsky, p. 141
#56	Ionian-Augmented	Goodrich, p. 35
#57	Locrian-Major	Colin, p. 307
#58	Zenkla	Daniel, p. 183
#59	Rummel-Meia	Daniel, p. 246
#60	Harmonic-Major	Slonimsky, p. 152
#61	Hindustan	Szabolcsi, p. 166
#62	Mixolydian	New International Ency., Vol. 16, p. 61
#63	Negro Spiritual	Southern, p. 191

6-TONE SCALES:

#64	Appalachian	
#65	African	Nketia, p. 118
#66	Blues	Clifford, p. 56
#67	Vilasakhani	Danielou, #2, p. 148
#68	Locrian 6-Tone	Collinson, p. 10
#69	Hidshaf	Daniel, p. 183
#70	Gurjari	Danielou, #2, p. 136
#71	Abuselik	Daniel, p. 183
#72	Phrygian 6-Tone	Flood, p. 33
#73	In Scale	
#74	Samanta	Danielou, #2, p. 187
#75	Irish	Collinson, p. 10
#76	African	Nketia, p. 118
#77	Dorian 6-Tone	Collinson, p. 10
#78	Panchana	Danielou, #2, p. 244
#79	Prometheus-Neapolitan	Persichetti, p. 53
#80	Augmented	given to me by Bud Conway
#81	Combined-Altered	
#82	6-Tone Symmetrical	Persichetti, p. 53
#83	Bangala	Danielou, #2, p. 122
#84	Greek	
#85	Polish	
#86	Ionian 6-Tone	Collinson, p. 10
#87	Appalachian	
#88	Akebono	Piggott, p. 67
#89	Overtone 6-Tone	Collinson, p. 27
#90	Aeolian 6-Tone	Collinson, p. 10
#91	Armenian, Anct. Church	
#92	Greek	Collinson, p. 10

(cont'd)

Scale Sources (cont'd)

#93	Glinka's	Vincent, p. 249
#94	Hungarian	
#95	Appalachian	Collinson, p. 10
#96	Scotch	Collinson, p. 10
#97	Whole Tone	Colin, p. 311
#98	Prometheus	Slonimsky, p. 14
#99	Lydian 6-Tone	Collinson, p. 10
#100	Scotch	Groves Dict. of Music, Vol. III, p. 349
#101	Appalachian	
#102	Mixolydian 6-Tone	Collinson, p. 10
#103	Guido's	Szabolcsi, p. 104

8-TONE SCALES:

#104	Hindu	Danielou, #1, p. 117
#105	Locrian 8-Tone #1	Danielou, #1, p. 117
#106	Phrygian 8-Tone #1	Danielou, #1, p. 117
#107	Hindu	Danielou, #1, p. 117
#108	Portuguese	
#109	Diminished #2	Golden Encycl. of Music, p. 504
#110	Espla's	Persichetti, p. 44
#111	Spanish 8-Tone	Laszlo/Snyder, p. 11
#112	Latin American	Laszlo/Snyder, p. 11
#113	Composite #1	Kynaston, p. 20
#114	Locrian 8-Tone #2	Daniel, p. 217
#115	Zirafkand	Daniel, p. 183
#116	'Iraq	Danielou, #1, p. 211
#117	Phrygian 8-Tone #2	Danielou, #1, p. 117
#118	Buzurg	Daniel, p. 183
#119	Scotch Bagpipe tuning	
#120	Irak.	Daniel, p. 183
#121	Jobim's	Conway's Analysis of Jobim's "Stoneflower"
#122	Aeolian 8-Tone #1	Danielou, #1, p. 117
#123	Dorian 8-Tone #1	Kynaston, p. 20
#124	Conway's 8-Tone	given to me by Bud Conway himself
#125	Diminished #1	Colin, p. 307
#126	Composite #2	Kynaston, p. 20
#127	Arabic	New Oxford Hist. of Music, Vol I, p. 450
#128	Aeolian 8-Tone #2	Danielou, #1, p. 210
#129	Isfahan	Harvard Dict. of Music, 2nd ed., p. 47
#130	Dorian 8-Tone #2	Danielou, #1, p. 117

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Scale Sources (cont'd)

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- | | | |
|------|-------------------------|----------------------|
| #131 | Ryo 8-Tone | Colin, p. 309 |
| #132 | Hindu | Danielou, #1, p. 117 |
| #133 | Hindu | Danielou, #1, p. 117 |
| #134 | Bop Scale | Middlebrook, p. 91 |
| #135 | Magon Abot | Colin, p. 310 |
| #136 | Mixolydian 8-Tone | Danielou, #1, p. 211 |
| #137 | Tcherepnin | Slonimsky, p. 28 |
| #138 | Locrian 9-Tone | Danielou, #1, p. 119 |

9-TONE SCALES:

- | | | |
|------|--------------------------------|----------------------|
| #139 | Phrygian 9-Tone | Danielou, #1, p. 120 |
| #140 | Hindu | Danielou, #1, p. 119 |
| #141 | Hindu | Danielou, #1, p. 119 |
| #142 | Auxiliary Blues | Kynaston, p. 20 |
| #143 | Bartok's 9-Tone | Yates, p. 179 |
| #144 | Aeolian 9-Tone | Danielou, #1, p. 119 |
| #145 | Dorian 9-Tone | Danielou, #1, p. 119 |
| #146 | Armenian, Ancient Church | |
| #147 | Ryo 9-Tone | Colin, p. 309 |
| #148 | Tudor Scale | Lloyd, p. 71 |
| #149 | Adonai Malakh | Colin, p. 310 |

10-TONE SCALES:

- | | | |
|------|--------------------------------|---------------|
| #150 | Algerian | Colin, p. 307 |
| #151 | Armenian, Ancient Church | |
| #152 | Russian Liturgical | |

5-TONE SCALES:

- | | | |
|------|-------------------------------|--|
| #153 | Semitonal Pentatonic #4 | |
| #154 | Japanese | Harvard Dict. of Music, 2nd ed., p. 20 |
| #155 | Pelog #1 | Colin, p. 307 |
| #156 | Pelog #4 | Persichetti, p. 50 |
| #157 | Hirajoshi #2 | Slonimsky, p. 162 |
| #158 | Pentatonic #5 | Vincent, p. 169 |
| #159 | Kumoi #5 | Persichetti, p. 50 |
| #160 | Javanese | Cipriani, p. 40 |
| #161 | Semitonal Pentatonic #1 | Danielou, #2, p. 315 |
| #162 | Hirajoshi #4 | Wade, p. 181 |
| #163 | Kumoi #2 | Wade, p. 181 |
| #164 | Pentatonic #2 | Vincent, p. 169 |
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Scale Sources (cont'd)

#165	Japanese Pentatonic #4
#166	Jazz Minor Pentatonic Reeves, p. 234
#167	Kumoi #3	..... Persichetti, p. 50
#168	Japanese Pentatonic #5	.....
#169	Diminished Pentatonic	..... Reeves, p. 236
#170	Jazz Dominant Pentatonic	..... Reeves, p. 236
#171	Japanese Pentatonic #3	.....
#172	Vibhasa	..... Danielou, #2, p. 107
#173	Hirajoshi #5	..... Colin, p. 307
#174	Pentatonic Dominant	..... Reeves, p. 236
#175	Rewa	..... Danielou, #2, p. 173
#176	Dominant Pentatonic	..... Reeves, p. 236
#177	Scriabin	..... Slonimsky, p. 161
#178	Hirajoshi #3	..... Persichetti, p. 50
#179	Pelog #3	..... Persichetti, p. 50
#180	Pelog #5	..... Harvard Dict. of Music, 2nd ed., p. 653
#181	Semitonal Pentatonic #3	.....
#182	Bulgarian	..... Densmore, p. 137
#183	Pelog #2	..... Persichetti, p. 50
#184	Hirajoshi #1	..... Persichetti, p. 50
#185	African	..... Harvard Dict. of Music, 2nd ed., p. 20
#186	Kumoi #1	..... Persichetti, p. 50
#187	Semitonal Pentatonic #2	.....
#188	Japanese Pentatonic #2	.....
#189	Semitonal Pentatonic #5	..... Danielou #2, p. 361
#190	Kumoi #4	..... Colin, p. 309
#191	Pentatonic #4	..... Vincent, p. 169
#192	Pentatonic #1	..... Colin, p. 311
#193	Jazz Pentatonic	..... Reeves, p. 235
#194	India	..... Coryell, p. 126
#195	Japanese Pentatonic #1	.....
#196	African	..... Nketia, p. 118
#197	Pentatonic #3	..... Vincent, p. 169
#198	African	..... Nketia, p. 118

CHROMATIC SCALES (WESTERN):

#199	Chromatic Harmonic	..... Groves Dict. of Music, Vol. VII, p. 440
#200	Chromatic Melodic	..... Harvard Dict. of Music, p. 753
#201	Chromatic Melodic Major Groves Dict. of Music, Vol. VII, p. 440
#202	Chromatic Melodic minor Groves Dict. of Music, Vol. VII, p. 440

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End of Bibliography

CHAPTER 32

GLOSSARY, CHART INDEX, SCALE NAME INDEX, & INDEX

CONTENTS OF CHAPTER 32:

Glossary	Page 803
Index of Charts by Their Chart Numbers (#1 - #103)	814
Alphabetical Index of Alternate Scale Names	817
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GLOSSARY

#1 - #198: The numbers given to the 198 different, known scales found in this book.
Called the "number of the scale" or "Scale Number".

½, 1, 1½, 2: Signs that show the distance between two consecutive notes in a scale:

½ = a half step (example: from B to C)

1 = 1 whole step (example: from D to E)

1½ = a whole step plus a half step (example: from A to C)

2 = two whole steps (example: from G to B)

5-Tone Scale (5-Tone): Also known as "Pentatonic Scale". ("Pent" means "five".) A Scale confined within an octave that contains five *different* notes (example: C, D, F, G, A) plus the last note of the octave (C, D, F, G, A, c). Or we could say that a 5-Tone Scale is a Scale made up of one Tetrachord and an overlapping (conjunct) trichord. Scales #153 to #198 in this book are 5-Tone Scales.

6-Tone Scale (6-Tone): A Scale confined within an octave that contains six *different* notes (example: C, D, E♭, F, G, A) plus the last note of the octave (C, D, E♭, F, G, A, c). Or we could say that a 6-Tone Scale is a Scale made up of two overlapping (conjunct) Tetrachords. Scales #64 to #103 in this book are 6-Tone Scales.

7-Tone Scale (7-Tone): A Scale confined within an octave that contains seven *different* notes (example: C, D, E, F♯, G, A, B) plus the last note of the octave (C, D, E, F♯, G, A, B, c). Or we could say that a 7-Tone Scale is a Scale made up of two separate (disjunct) Tetrachords that are joined by a connecting interval. Scales #1 to #63 in this book are 7-Tone Scales.

8-Tone Scale (8-Tone): A Scale usually (but not always) confined within an octave that contains seven *different* notes (example: C, D♭, E, F, G♭, A♭, B) *plus* the last note of the octave (C, D♭, E, F, G♭, A♭, B, c) *plus* one extra note -- usually an altered note within the octave (C, D♭, E, F, G♭, A♭, A, B, c). Or we could say that an 8-Tone Scale is a Scale made up of two disjunct Tetrachords joined by two connecting intervals. The two connecting intervals could have been called a trichord, but the scale seems easier to "see" if they are used as connecting intervals instead. An example of an 8-Tone Scale that is *not* confined within the octave would be ♭, C, D, E♭, F, G, A♭, B♭, c. Scales #104 to #136 are 8-Tone Scales.

9-Tone Scale (9-Tone): A scale usually (but not always) confined within an octave that contains seven *different* notes (example: C, D, E♭, F, G, A, B♭) plus the last note of the octave (C, D, E♭, F, G, A, B♭, c) *plus* two extra notes, usually within the octave (C, D, E♭, E, F, G, A, B♭, B, C). Or we could say that a 9-Tone Scale is

(cont'd)

Glossary (cont'd)

a Scale made up of three conjunct (overlapping) tetrachords. An example of a 9-Tone Scale that is not confined to the octave would be C, D, E \flat , F, G, A, B \flat , c, d \flat , e \flat . Scales #137 to #149 in this book are 9-Tone Scales.

10-Tone Scale: A 7-Tone Scale within an octave *plus* the last note of the octave *plus* three extra notes (a conjunct tetrachord) beyond the octave. (Example: C, D, E \flat , F \sharp , G A \flat , B c, d \sharp , e, f) Scales #150 to #152 in this book are 10-Tone Scales.

---A---

Above the Scale Octave (Above the octave): Any note that goes beyond the six whole steps from the tonic (first note of the scale). (An octave equals six whole steps.)

Alteration (Numerical Alteration): The way a scale is changed that makes it different from the Major Scale.

Altered: How one scale can be changed by adding or omitting a tone or tones, to become another scale. (See page 323.)

Alternate Name: Scales often have several different names, depending on the country or the situation. (Example: The Major Scale and the Ionian Scale, a Church scale, are the same scale, just different names for the same set of intervals.) Or they may have no "name" at all but be called simply after the name of the country or ethnic group which uses them (Example: Arabic, Hindu). In The Grand Finale (which starts on page 405) each scale is shown with its Scale Number and all of the other names which I was able to find for each particular scale. These are that scale's Alternate Names. In the "Alphabetical Index of Alternate Scale Names" (starting on page 817) all of the various names are shown with the Scale Numbers of the scales that I found that were called by that name. Some names have only one scale by that name; others, such as "Minor Pentatonic", have several scales by that name.

Alternate Symbols: Each Scale in this book has been given a Symbol that shows the relationship of that scale to the Major Scale. (Example, Scale #84 is Major 2- 6 omit 7-. That is the Symbol of Scale #84.) An Alternate Symbol would be one that would still designate that scale but would be different from the assigned Symbol -- but the scale would still have the same intervals. (Alternate Symbols for Scale #84 would be Major 6 omit 2- 7-, or Major 2- 6+ 7 omit, or Major 7 omit 2- 6+.) The Alternate Symbols and Symbols are all listed in The Grand Finale (starting on page 405) and "Scales By Symbols & Alternate Symbols in Order of Numerical Alterations"

(cont'd)

Glossary (cont'd)

(starting on page 85). In The Grand Finale only, this also means Symbols using other 7-Tone Scale Names (such as #84 = #31 Spanish 6 omit).

---B---

Backward (Bkwd): (Also "Inverted", "Descending Inverted" [Des-Inv], "Retrograde-Inverted".) Take the descending intervals of a scale from the highest note by interval to the lowest note. Play the descending intervals in an ascending manner. (Example: Scale #158 would normally be played as C, E \flat , F, A \flat , B \flat , c. The intervals are 1½-1-1½-1-1. Written backwards, these intervals are 1-1-1½-1-1½. Then if these backward intervals are played in an ascending manner, the notes are C, D, E, G, A, c -- which is Scale #197. The scales are shown "Backwards" starting on page 250. This can also be done with the Modal Series, often producing another Modal Series (see page 286).

Below the Octave (Below the Scale Octave): Any note below the tonic (first note of the scale).

---C---

Church Mode (Ecclesiastical Mode): See "Ecclesiastical Modes"

Combination Scale (Comb.): Any scale with a "consistent inconsistency" of one particular point in the scale. (Example: Scale #5, Jewish, Major [2/2+] 7-. This combines #32, Major 2+ 7- and #62, Major 7-, and as we look, we see that throughout a piece the 7th Scale Point Tone is always flatted (lowered a half-step), but sometimes the 2nd Scale Point Tone is a natural and sometimes it is raised a half-step (sharped). But it is never played with the natural (neutral) 2nd, raised 2nd, and neutral 3rd Scale Point Tones in consecutive order -- if it were, it would be an 8-Tone Scale which had the raised 2nd as part of the scale itself and would then be designated as Major 2 2+ 7-. However, back to Scale #5. In this, the 2nd Scale Point Tone fluctuates. This fluctuation is indicated by the two notes being put together in brackets, but separated by a slash: [2/2+]. The fluctuating intervals are also shown both ways within the brackets, separated by a slash: [1½-½-½/1-1-½] -1- 1-½-1. On the staff, the fluctuating notes are connected with a slur: ~ The ten Combination Scales of this book are shown on page 124.

Conjunct: Joined together. In musical scales it means that the two tetrachords (or tetrachord and trichord) (see under the "T's" in this Glossary) overlap each other. For example, Scale #103, which has the notes C-D-E-F-G-A-c, has two conjunct

(cont'd)

Glossary (cont'd)

Tetrachords. The first is C-D-E-F, and the other is F-G-A-c. Both tetrachords include the note "F", so they overlap and are called "conjunct" ("with joining").

Connecting Interval (Con. Int.): An interval that connects two disjunct tetrachords in a scale (see "disjunct", below). For example, the Major Scale has the notes C-D-E-F-G-A-B-c, and it has the intervals 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$. "C, D, E, and F" are the four ("tetra") notes that make up the first Tetrachord, their intervals being 1-1- $\frac{1}{2}$. Notes "G, A, B, c" are the four notes making up the second Tetrachord, with intervals of 1-1- $\frac{1}{2}$. This takes care of the first three intervals and the last three intervals of the Major Scale. But that leaves us with an interval of "-1-" between the two tetrachords - the distance between the "F" and the "G". This interval of "1" is the "Connecting Interval", because it connects the two tetrachords of the scale.

---D---

Descending or Descending Scale (Des.): The Intervals of the scale as they progress from the highest note in the scale to the lowest note. (Example: c-B \flat -A-G-F-E \flat -D-C).

Descending-Inverted (Des-Inv): Also called "Backward" of "Retrograde-Inversion". See "Backward", above.

Diatonic Modes or Diatonic Scales: From a Greek word meaning "through the tones". The seven specific scales (including our Major and Natural minor scales) which make up the Modal Series numbered Modal Series 7-I in this book. The Diatonic Scales are commonly called the "Major Scale and its modes". Also know as the Church Modes or Ecclesiastical Modes. For more information on the Diatonic Modes see Section F, starting on page 345.

Disjunct: Separated, without joining or junction. In musical scales it means that the two tetrachords of a scale are separated by a connecting interval. In this book it is said that "two tetrachords are joined or connected by a connecting interval". More accurately, the book would say "two separated tetrachords joined by a connecting interval". Example, in the Major Scale, the notes are C-D-E-F-G-A-B-c, and the intervals are 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$. There are two tetrachords (C-D-E-F and G-A-B-c), each with intervals of 1-1- $\frac{1}{2}$. These two groups of intervals are connected by (or one might say "separated by") the middle interval of "1". (See "Connecting Interval".)

(cont'd)

Glossary (cont'd)

---E---

Ecclesiastical Modes (Church Modes): The six specific 7-Tone Scales with their corresponding scales which were the only official scales for the Roman Catholic Church during a long period of its history. Also called the "Diatonic Modes". See "Diatonic Modes", above.

Ethnic Group: Pertaining to a specific country or group of people, such as France, the Gypsy, or Peruvian Indians.

Ethnic Scale: A scale used by a specific country or group of people. The same scale might be used among the Arabic, Gaelic, and Roumanian peoples. Therefore, it would be an Arabic ethnic scale, a Gaelic ethnic scale, and an Roumanian ethnic scale, though the Name of the scale might be something entirely different, such as "Dorian". See Section D, starting on page 189, for the Ethnic Scales and the groups that use them.

---F---

Formula (Tetrachordal Formula): A consecutive list of the Tetrachords, Trichords, and/or Connecting Intervals that make up a scale, using the signs for Tetrachords and Trichord (see page 24). Example: The Major Scale has the intervals 1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$. This breaks down into two tetrachords of 1-1- $\frac{1}{2}$ (which have a Tetrachordal Sign of "M"). These two tetrachords are connected by an interval of "1". Put together in their sequence, they read M-1-M. This is the Formula for the Major scale in this book. Each scale has its *own distinct, unchanging* Formula, which is the most reliable means of identification in this book. There are *NO* alternate formulas. (See page 113 for a list of all of the scales in this book by their Formula.)

---H---

Half-Step ($\frac{1}{2}$): The distance between one key on the piano and the very next key (whether white or black). Example: B to C is a half-step; G to A \flat is half-step.

---I---

Interval (Int.): The distance in half and/or whole steps between two specific tones (notes). For example, the interval between D and D \flat is a half-step ($\frac{1}{2}$); between A and C is a step and a half ($1\frac{1}{2}$), etc.

(cont'd)

Glossary (cont'd)

Interval Combination: The combination of Intervals involved within a specific scale. Example: The Interval Combination for the Major Scale (Scale #1 in this book) is 1-1- $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$, while the Interval Combination for the Harmonic minor Scale (#47) is 1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1- $\frac{1}{2}$.

---J---

Jazz Scale: A scale that the jazz musician might use in conjunction with a specific chord. Example: A jazz pianist might be playing a Dominant 7th Chord with his left hand while improvising runs in the Mixolydian Scale with his right hand. The Mixolydian "sounds good" "against" that chord.

---K---

Known Scale: Any of the scales contained in this book. These were all found in outside sources. There must be many, many more "known" scales used by ethnic groups or composers that I could not "find". However, "known scales" as used in the context of this book applies *only* to the scales within this book itself, those known to me.

---L---

Lowered (-): Flatted. Example: A lowered E is E \flat . "6-" means that the 6th tone (note) on the scale is flatted (lowered) $\frac{1}{2}$ step.

---M---

Modally: To make a Modal Series out of a scale. (See next two items, below.)

Modal Series (MS): This can best be defined by giving an example: Take a scale either by the intervals involved or by the names of the notes. Let's use the 5-Tone Scale #192 (Major 3 omit 7 omit), the Pentatonic #1 Scale. Then we will make a Modal Series out of it by starting a "new" scale on each note of #192, consecutively (cycling the notes):

C-D-F-G-A-c	. . . . .	1-1 $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$
D-F-G-A-C-d	. . . . .	1 $\frac{1}{2}$ -1-1-1 $\frac{1}{2}$ -1
F-G-A-C-D-f	. . . . .	1-1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$
G-A-C-D-F-g	. . . . .	1-1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1
A-C-D-F-G-a	. . . . .	1 $\frac{1}{2}$ -1-1 $\frac{1}{2}$ -1-1

Each of these five ways will sound different from the other four. The five scales together make up a Modal Series (numbered MS 5-V in this book, the 5th [V] group

(cont'd)

Glossary (cont'd)

of Modal Series (MS) of 5-Tone Scales). All of the scales in this book except Combination Scales and the few scales over an octave have been put into a Modal Series, starting on page 265

Modal Series Scale Point Tone Number (MS:SPT#): This number shows where a particular scale stands in its own Modal Series. For instance, in the example above, the scale with the intervals 1-1½-1-1½-1 would have the MS:SPT of MS 5-V:4, since it stands 4th in the Modal Series 5-V.

Mode: A scale which is one of the steps of a Modal Series. It may also refer simply to an entire Modal Series (the "Diatonic Modes").

---N---

Name (Scale Name): The one particular name under which one particular scale goes in this book. In this book, a scale may have many Alternate Names (see above, "Alternate Names"), but only one "Real Name". The "Real Name" is used in all places except in The Grand Finale (starting on page 405) where the Alternate Names are listed along with the "Real Name" and in the "Alphabetical Index of Alternate Scale Names (starting on page 817).

Number (#): A special number (#1 to #198) which I have assigned to each particular scale. (See page 8 for an explanation of how I came by these numbers.) Also referred to as "Scale Number". This is my own numbering system, and these are *strictly my numbers*.

Numerical Alteration (Alteration): The way a scale is changed that makes it different from the Major Scale. Example: Scale #60, Harmonic-Major is just like the Major Scale except that the 6th Scale Point Tone is lowered (flatted) ½ step (which gives #60 the Symbol of "Major 6-").

Numerical Scale Order: This designates the scales of this book in consecutive order from #1 to #198.

---O---

Octave: The distance between a note and the next note with the same letter name. (Example: With C-D-E-F-G-A-B-c, C - c is an octave.) In the Western world the octave has been divided into 12 half-steps, making the Western octave consist of 6 whole steps. Other societies have divided the octave up into other numbers of steps.

(cont'd)

Glossary (cont'd)

This division is arbitrary. However, the basic, undivided octave (for example, C - c or F - f) is *not* arbitrary. It is based on the God-given physical relationships of sound vibrations.

Omitted Tone: Any tone "left out" of a 7-Tone Scale. This book takes the 7-Tone Scale as a "standard" scale. A 6-Tone Scale is then considered a scale with one omitted tone (example: #95 Appalachian, Major 3 omit 7-). A 5-Tone Scale is then, also, a scale with omitted tones, two of them. The omitted tone is the Scale Point Tone that is "left out" of the 7-Tone Scale. Example: Scale #182 Bulgarian is a 5-Tone Scale that is just like the Major Scale (C-D-E-F-G-A-B-c) except that the 2nd and the 7th Scale Point Tones are omitted, leaving a scale made up of C-E-F-G-A-c. D and B are omitted tones. So we call Scale #182 Bulgarian a 5-Tone Scale and give it the Symbol of "Major 2 omit 7 omit", since the D and B would have been the 2nd and 7th Scale Point Tones.

---P---

Pentatonic (Pent.): 1. Any 5-Tone Scale. ("Pent" means "5") Scales #153 to #198 in this book are pentatonic (5-Tone) scales. 2. Pentatonic #1 through Pentatonic #5 are the names given in this book to a certain group of pentatonic (5-Tone) scales which make up Modal Series 5-V (page 142). They are #192, 164, 197, 191, and 158, consecutively in the Modal Series. These are the very most common 5-Tone Scales and are found "everywhere". They are what most people immediately think of when the term "pentatonic scale" is used.

---R---

Raised (+): Sharped. Example: A raised F is F#. "4+" means that the 4th tone of the scale is sharped (raised) a half ($\frac{1}{2}$) step.

Reference: See "Source", below.

Retrograde-Inversion (Ret-inv): Also called "Backward" and "Descending-Inverted". See "Backward", above.

---S---

Scale: A consecutive series of tones (usually confined within an octave) at fixed intervals which shows which intervals (and tones, if you know what key it is in) are

(cont'd)

Glossary (cont'd)

involved. (Example: #15 Phrygian in the key of C has the notes C-D \flat -E \flat -F-G-A \flat -B \flat -c, but in the key of E its notes are E-F-G-A-B-C-D-e. However, the intervals of the Phrygian scale -- no matter what key it is in -- are *always* $\frac{1}{2}$ -1-1-1- $\frac{1}{2}$ -1-1.) A scale can start on any note, provided that the intervals remain the same. In the example above, the notes G \sharp -A-B-C \sharp -D \sharp -E-F \flat -g \sharp still make up the Phrygian Scale (#15), since the intervals are still the same.

Scale Number: See "Number", above. (In this book, the Scale Numbers are #1 to #198.)

Scale Octave: The octave that contains a specific scale, whether it be a 5-Tone Scale between D and d, or an 8-Tone Scale between A \sharp and a \sharp .

Scale Point Tone: The definition of "Scale" (above) states that a scale has a certain pattern of notes which is produced by set intervals. The Scale Point tells which particular place in the scale is being referred to. Example: In the Key of C Major (C-D-E-F-G-A-B-c), E is the 3rd note in the scale. Therefore, it is the 3rd Scale Point Tone. G is the 5th Scale Point Tone. The term "5th Scale Point Tone" would refer to the 5th note in the scale, no matter in which key the scale was.

Scale Point Alteration: Any change in the normal position of a point of a particular scale. In Scale #62 Mixolydian (C-D-E-F-G-A-B \flat -c) if the flatted 7th Scale Point is changed (altered) to a natural 7th (a B as opposed to a B \flat in our example), then it would be said that there as a Scale Point Alteration of the 7th Scale Point. Nearly always in this book the term "Scale Point Alteration" refers to changes (alterations) from the Major Scale. The main exception is in The Grand Finale where each scale is shown with alterations.

Scale Intervals: The combination of intervals involved in a specific scale. For example: #45, the Half-Diminished Scale, has Scale Intervals of 1- $\frac{1}{2}$ -1- $\frac{1}{2}$ -1-1-1; and #30, the Double Harmonic Scale, has Scale Intervals of $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$ -1- $\frac{1}{2}$ -1 $\frac{1}{2}$ - $\frac{1}{2}$.

Scale Spelling (Spelling): See "Spelling", below.

Source: One of the source materials listed in the Bibliography (page 797) where a particular scale can be looked up and verified. Often there are several possible references. However, in the "Sources of Individual Scales" (page 791) and in The Grand Finale, I have chosen only one source (reference) for each scale.

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Glossary (cont'd)

Spelling (Scale Spelling): The names of the notes used for a scale with their sharps and flats. Example: Are the Intervals $\frac{1}{2}$ - $\frac{1}{2}$ -1-1- $\frac{1}{2}$ -1-1- $\frac{1}{2}$, "spelled" C-C \sharp -D-E-F \sharp -G-A-B-c, or are they spelled C-D \flat -D-E-F \sharp -G-A-B-c? The spelling makes no difference when just a melody is used, however, it can make a difference when chords are used. See page 123 for "Correct Spelling" and "Today's Spelling". The spelling of a scale makes a great difference in the Symbol of a scale. In our example above, is the Symbol: Major 1 1+ 4+? Or is it Major 2- 2 4+? I have chosen one scale spelling to be the "real" spelling and used it throughout this book. However, the "real" spelling and also the alternate spellings are all listed in two places in this book: (1) In "Scales by Symbols & Alternate Symbols in Order of Numerical Alterations", starting on page 81, and (2) under each separate scale in The Grand Finale, starting on page 405.

Staff: The five lines on which music is written. This book uses only the upper staff with the treble clef.

Step: The distance between two notes. See the second definition in the Glossary, " $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2" or "Intervals" (above).

Symbol: The Symbol of a scale shows how that scale differs from the Major Scale. Example: #15 Phrygian has as its Symbol "Major 2- 3- 6- 7-". This shows that the Phrygian Scale is like a Major Scale with the 2nd, 3rd, 6th, and 7th Scale Points lowered a half step (flatted). In the key of C the Phrygian Scale would be: C-D \flat -E \flat -F-G-A \flat -B \flat -c. Some scales have Alternate Symbols (see "Spelling" and "Alternate Symbols", above), but I chose one Symbol and used that one throughout the book. The Symbol makes it possible to play any scale easily by simply choosing a Major Scale in the key you want and then changing that Major Scale to your desire scale by following the alterations-from-the-Major shown by the Symbol.

---T---

Tone: One note of a scale. Example: The scale C-D-E-G-A-B-c has six *different* tones (notes) plus the repeated note at the top of the octave. Therefore it is a 6-Tone Scale.

Tone Group: There are six Tone Groups in this book. They are designated by the number of tones in each scale. The Tone Groups are: 5-Tone Scales, 6-Tone Scales, 7-Tone Scales, 8-Tone Scales, 9-Tone Scales, and 10-Tone Scales. Each of these is a Tone Group.

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Glossary (cont'd)

Tetrachord (Tet.): Four consecutive tones (notes) form a Tetrachord. "Tetra" means "four". (Example: C-D \flat -E-F) These four notes provide three Intervals. In this book the Tetrachords are shown by the Tetrachord Signs (see page 24) which stand for the Intervals between the four notes of the Tetrachord. (In the Example above: The notes form the Intervals $\frac{1}{2}$ - $1\frac{1}{2}$ - $\frac{1}{2}$ which has the Tetrachord Sign "mH".) Scales are made up of Tetrachords combined either with other tetrachords, a trichord, and/or one or two connecting intervals.

Tetrachord Sign: A sign or symbol used to signify a particular tetrachord. Each Tetrachord in this book has its own unchanging sign, which I arbitrarily assigned to it. Example: The tetrachord with the intervals of 1 - $1\frac{1}{2}$ has the tetrachord sign of "M"; the tetrachord with the intervals of 1 - $\frac{1}{2}$ - 1 has the tetrachord sign of "m"; the tetrachord with the intervals of $1\frac{1}{2}$ - 1 - 1 has the tetrachord sign of "(16)". For a chart of all of the Tetrachord Signs with the intervals involved, see page 24.

Tetrachordal Formula (Formula): See "Formula", above.

Trichord (Tri.): Like a Tetrachord (above) except it is composed of three consecutive notes ("tri" meaning "three") and makes only two consecutive intervals. Trichords are combined with one tetrachord to make 5-Tone Scales. See page 24.

Trichord Sign: The same as "Tetrachord Sign" (above) except it is given to a Trichord for identification purposes and for easy notation of Scale Formulas. These signs also were arbitrarily chosen by me, the author.

---W---

Whole Step: Two half steps. The distance between three consecutive keys (whether black or white) on a piano. Example: B-C \sharp is a whole step; G-A is a whole step.

End of Glossary

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Many times a scale has more than one name. For example, Scale #159 in this book, which I call "Kumoi #5" from Mr. Persichetti's book, I also found in two other places under two different names. The second place I found this scale, it was called "Jazz Pentatonic", and the third place it was called merely "Jazz Scale". So when I found more than one name for a scale, I then had to make a choice of which name I would use, however, I didn't want to "lose" the other names. Therefore, in The Grand Finale if a scale has more than one name (that I have found -- I'm sure many scales have more), I listed all of the names for that particular scale under "Alternate Names". Below, is a list of all the various names I was able to find, for all of the scales in this book, along with the number that I assigned to that scale. Remember, you can use that number (called a "Scale Number") to look up a scale in The Grand Finale (starting on page 405). (For a list of the 21 scales whose names I "made up", see Chart #21 on page 128.)

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